OSQ2
SPEED IN MEDIUM HARD FORMATIONS
SHALE, SALT, RED BED, CHALK, ANHYDRITE, ETC.
Hughes "OSQ-2" Tricone is designed for medium rock formations, such as shale, salt, red-bed, chalk, gyp, anhydrite, etc.
This range of formations requires a bit with good action on bottom and widely spaced, deep, self-cleaning teeth.
The harder formations in this range usually are best drilled with the finer-tooth designs---types "OSQ" and "OSQ-1." Type "OSQ-3" finds its best use in the lower, or softer end of the medium range.
Whatever the formation encountered, there is a Hughes Rock Bit "Tailor-Made" for maximum speed and economy.
Type "OSQ-2"
Sizes 5⅛"
and Larger
HUGHES TOOL COMPANY
HOUSTON, TEXAS

LARGER SPROCKETS
MILE-A-MINUTE CHAIN SPEEDS
AMAZING RESULTS

Simply using larger sprockets with more teeth, running chain speeds up to a mile a minute or more, gives an enormous increase in the power-transmitting capacity of Morse Chain.

Where such treatment results in more slip on other drives, the silent chain actually uses centrifugal force to give better contact with sprocket teeth and better load distribution.

NOW *Really* SILENT

So smooth you can hardly hear it.

***Increased* LOAD CAPACITY**

Load capacity goes up directly as the chain speed increases. There is no slip—no wasted power with a Morse Silent Chain—no excessive tension to increase bearing loads.

WEAR *Eliminated*

Research has shown and experience proves that wear is at a bare minimum on Morse high speed chain and sprockets. Driving forces are spread over a greater number of teeth, giving longer life and highest efficiency of any mechanical power transmission.

The greatest advantage of this type of drive design comes where speed ratios are not large, such as from 1 to 1, up to 3 or 4 to 1.

Houston Office:
1418 POLK AVE. HOUSTON, TEXAS

SILENT CHAINS ROLLER CHAINS FLEXIBLE COUPLINGS KELPO CLUTCHES

MORSE *positive* DRIVES

MORSE CHAIN COMPANY ITHACA N. Y. DIVISION BORG-WARNER CORP.

Your DEEP WELL Servicing Problems CAN BE SOLVED . .

A. D. ENGLE & COMPANY
OIL WELL SERVICING
PHONE 2-3401
310 INSURANCE BUILDING
OKLAHOMA CITY

June 6, 1940

Cardwell Manufacturing Co , Inc
P. O. Drawer 2001
Wichita, Kansas

Gentlemen:

On April 22, 1940 we moved our Cardwell Model RL double drum unit on Sinclair Prairie Oil Company's #1 German, located in Caddo County.

We spooled 10,500 feet of wire line on the lower drum, and began to bail rotary mud with 5 inch sectional bailer. We bailed this hole to the bottom, or to a total depth of 9,570 feet, and in bailing off bottom, we were bailing some very heavy mud. The bailer itself was 87 feet long, made out of 5 sections, 5 inch, 17 pound, seamless casing. The thing that surprised all of us was the fact that we were using US motor fuel, instead of natural gas or butane, as the motor on this unit is a high compression motor. Bailing directly from bottom in second gear, we tested out the formation at the depth, and to date we are testing formations above. We have not had any break-downs, and are using the original set of brake linings and drums.

We thought you might be interested in the above information.

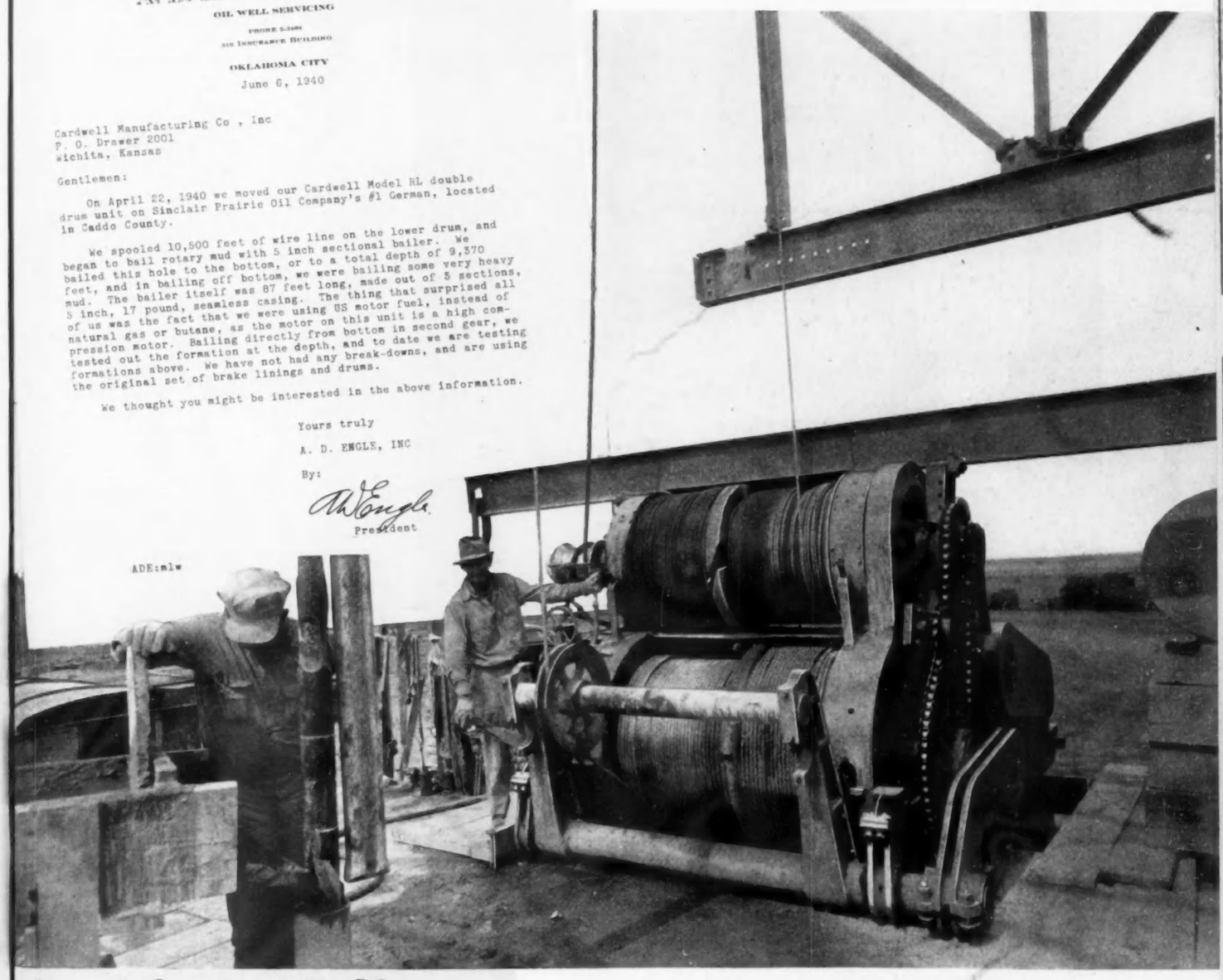
Yours truly

A. D. ENGLE, INC

By:

President

ADE:mlw



ith a "Cardwell" Rig . .

FIVE WAYS A "CARDWELL" HELPS SOLVE YOUR PROBLEMS

TRANSMISSION—The new "Cardwell" five-speed, even-step transmission of 1450 foot-pound torque capacity (240 hp) has a single lever gear shift and requires only one movement to shift from low to high. This results in faster operation when running or pulling tubing or drill pipe.

FRICTION CLUTCHES are mounted on the countershaft to transmit the power directly to the drums and are shielded against oil and water. They may be engaged quickly or slowly as the job demands, saving time at each operation and absorbing the shock load of each engagement. More than 500 of these friction clutches have been placed in use since 1936 without a single part failure. There is a jaw clutch in each drum for providing full floating drums.

DOUBLE SAFETY BRAKES—The "Cardwell" brakes are water-cooled and designed so either brake will automatically operate independently and hold the full capacity load, yet they are fully equalized and have a single adjustment. The brake flanges are rolled alloy steel, heat-treated and ground, with three to four times the life of ordinary steel flanges. The smooth, polished hard surface gives more than twice the ordinary brake lining life.

LOW COST HAULAGE AND RIG-UP TIME—The lightest and strongest of alloys are used in the all-steel construction of this rig. The engine and hoist are mounted on one skid to facilitate handling. Every wearing part of this "Cardwell" rig is heat-treated to the last pin and pin hole in the control mechanism. Light weight results in low hauling costs.

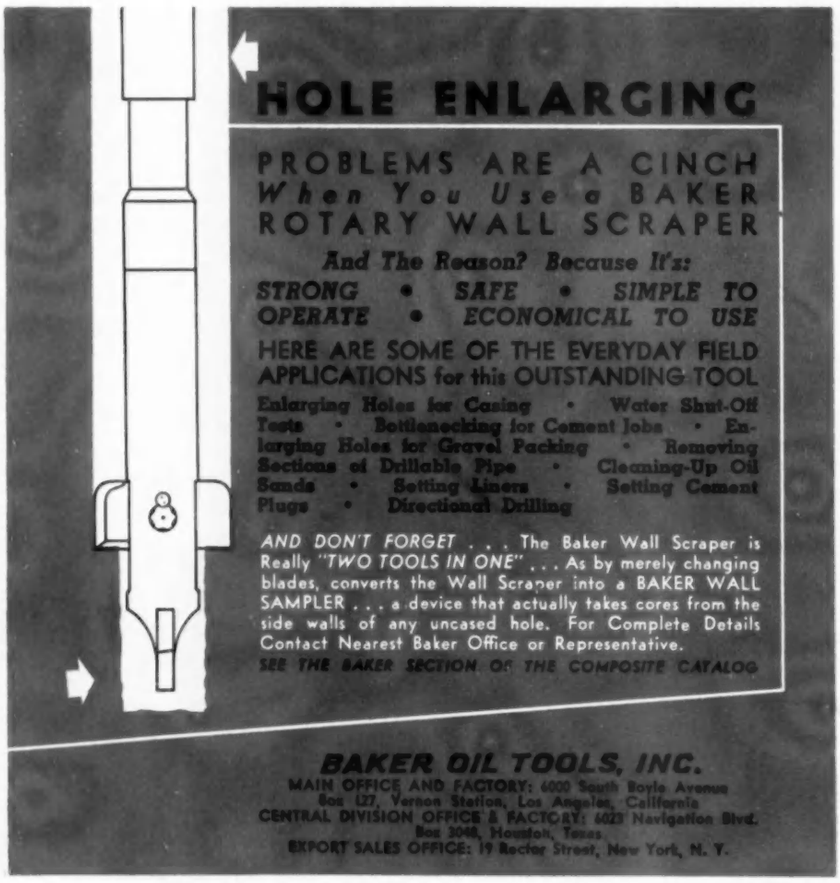
PARTS SERVICE—Conveniently located parts stock stores are factory owned and offer nation-wide service for all "Cardwell" rigs.

CARDWELL ALL STEEL
TRADE MARK
THIS TRADE MARK INSURES HIGHEST QUALITY AT LOWEST PRICE

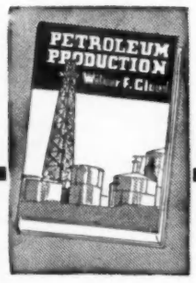
CARDWELL MFG. CO. INC.

FORMERLY ALLSTEEL PRODUCTS MFG CO
P. O. Drawer 2001 - Cable Addresses: "ALLSTEEL", WICHITA - "CARDSTEEL", NEW YORK
Wichita, Kansas, U. S. A.

- We build 16 models of servicing winches and drilling rigs — Send your well depths and details of your well equipment for recommended model and size. We have a standard model for any drilling problem or operating method.


HOLE ENLARGING
PROBLEMS ARE A CINCH
When You Use a BAKER
ROTARY WALL SCRAPER
And The Reason? Because It's:
STRONG • SAFE • SIMPLE TO OPERATE • ECONOMICAL TO USE
HERE ARE SOME OF THE EVERYDAY FIELD APPLICATIONS for this OUTSTANDING TOOL
Enlarging Holes for Casing • Water Shut-Off Tests • Bottlenecking for Cement Jobs • Enlarging Holes for Gravel Packing • Removing Sections of Drillable Pipe • Cleaning-Up Oil Sands • Setting Liners • Setting Cement Plugs • Directional Drilling
AND DON'T FORGET . . . The Baker Wall Scraper is Really "TWO TOOLS IN ONE" . . . As by merely changing blades, converts the Wall Scraper into a BAKER WALL SAMPLER . . . a device that actually takes cores from the side walls of any uncased hole. For Complete Details Contact Nearest Baker Office or Representative.
SEE THE BAKER SECTION OF THE COMPOSITE CATALOG
BAKER OIL TOOLS, INC.
MAIN OFFICE AND FACTORY: 6000 South Boyle Avenue
Box 127, Vernon Station, Los Angeles, California
CENTRAL DIVISION OFFICE & FACTORY: 6023 Navigation Blvd.
Box 3048, Houston, Texas
EXPORT SALES OFFICE: 19 Rector Street, New York, N. Y.

PETROLEUM PRODUCTION



By **WILBUR F. CLOUD**

A new book dealing with the fundamental operations and technical processes of oil production. It offers to the oil executive, the engineer, and the man in the field a most comprehensive treatment of the subject.

PETROLEUM PRODUCTION contains 613 pages of text, with 280 illustrations and 75 practical tables and charts. Price $5.00. Order your copy today from **Book Department.**

GULF PUBLISHING CO.
3301 Buffalo Drive, Houston, Texas

Looking Ahead

WITH THE EDITOR

IT HAS BEEN SUGGESTED that oil men and New Dealers have one problem at least in common — inability to express themselves in figures of digestable size. In oil we juggle with an annual two-billion-barrel consumption, an eighteen-billion-barrel reserve, and a billion-dollar annual tax bill. (Gasoline taxes paid by the public included). We have found in the past ten years twenty-billion barrels of oil, almost but not quite enough, to completely submerge a fourteen-billion-dollar industry. Now we are told to wipe our eyes and start a search for eighteen billion barrels of new reserves that must be found during the next thirteen years to maintain our status quo. Why this must be done and where these new reserves most likely will be discovered will be set forth in an early article.

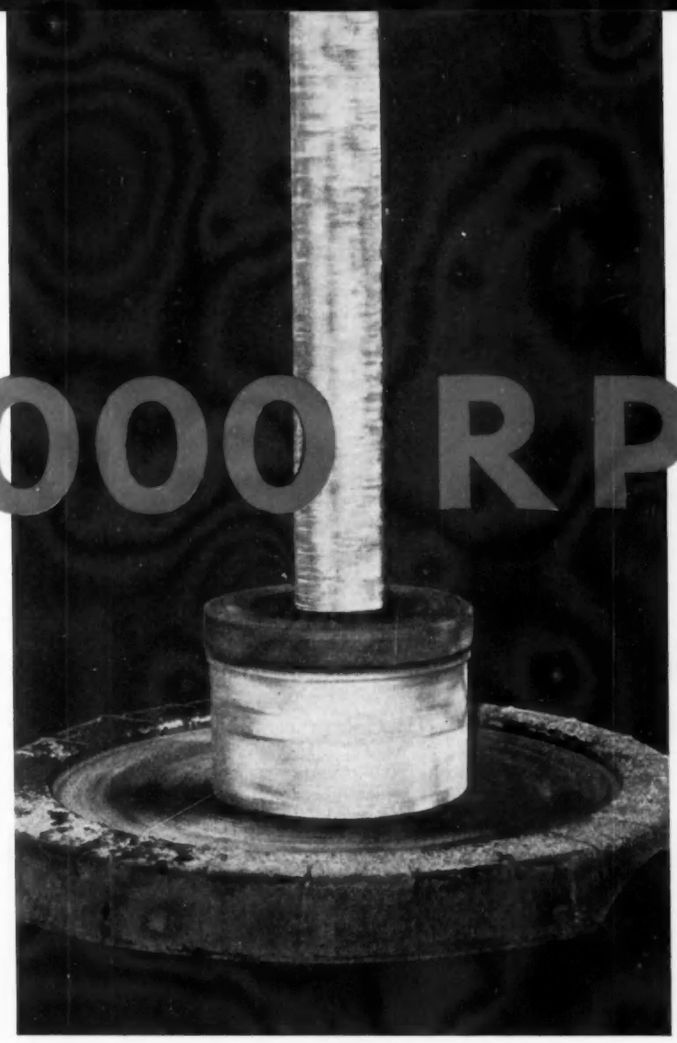
THE OIL-PRODUCING INDUSTRY has certainly come to life on the subject of recycling. Of course, the discovery of some high-pressure wet gas fields led the way with the lure of possible profit from a source of supply that could not be produced otherwise. But recycling, or pressure maintenance as it is known in its simpler form, is a conservation movement that will find increasing acceptance in future oil production. The current series of articles appearing in THE OIL WEEKLY, covering the various aspects of modern recycling, will bring you up to date on this important and expanding practice.

IF YOU have only a passing acquaintance with the modern oil-field boiler you probably think, as we did, that nothing much of interest could be written about this rugged and somewhat prosaic piece of oil-field equipment. Well, you're wrong—

We have been digging into the boiler subject for an article in our Composite Equipment Review series and we were amazed at both the remarkable advancements in design and construction as well as the increased operating efficiency currently being attained.

The life blood of the drilling rig comes from the prime mover, you know, and progress in drilling is thus largely dependent upon developments at the power end. Boiler manufacturers are aware of their responsibility and are keeping abreast of oil-field requirements. In fact progress has been so rapid that since starting our study several weeks ago it has been necessary to revise our data to provide descriptions of several new designs. Take a look at our article, "Oil-Field Boilers Keep Pace with Rig-Power Requirements," in the next issue.

The OIL WEEKLY, Published every Monday. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.



BAASH-ROSS type 2R

Roller KELLY DRIVE BUSHINGS

are a jump ahead of today's fastest rotaries

ANOTHER BOOST in rotary speeds is due—this time to 1000 RPM or higher. With every advance in rotary speed, precise control of drilling weight through *frictionless feeding of the kelly* becomes more vital, for if the kelly binds in the table the straight-hole making and time saving advantages of high speed drilling are sharply reduced.

In developing Type 2R *Roller* Kelly Drive Bushings for square and hexagon kellys, BAASH-ROSS anticipated the high rotary speeds of the future, and built into them the strength and mechanical fitness to withstand speeds far higher than the 1000 RPM that's coming. To accomplish this result, every feature of design, construction and metallurgy of BAASH-ROSS 2R *Roller* Kelly Drive Bushings was engineered with safety factors far and beyond those necessary for even 1000 RPM service. They are MODERN *Roller* Kelly Drive Bushings—not a previous model "heavied up"—and their economy and stamina are proved by the dozens of them that have delivered thousands of feet of high-speed drilled hole without a cent for repair.

You can buy a BAASH-ROSS Type 2R Roller Kelly Drive Bushing today and know that it will serve you economically through years of highest speed drilling, with all the advantages and equipment savings of the frictionless feed that only ROLLERS can give. Order one now.

SEND FOR ENGINEERING, METALLURGICAL AND PERFORMANCE DATA

BAASH ROSS

BAASH TOOL CO. ROSS

TOOL COMPANY
OIL WELL TOOLS · SPECIALTIES

LOS ANGELES
HOUSTON · NEW YORK

THEN...as NOW

***the* SAME . . DEPENDABLE PRODUCTS**

DARCOVA
(Orange Label) the standard for more than thirty years under severe service at all depths.

DARVAL
(Blue Label) for service in wells to approximately 2,000 feet in depth.

DARFLEX
(Green Label) the popular favorite for wells to 800 feet in depth.

Uniformity over a thirty-five year period is more than a recommendation—it's a **definite** assurance of service and savings that explain why America's first composition cups remain **foremost in the field!**

DARCOVA Pumcups for Pumps

Manufactured Only by

DARLING VALVE & MFG. CO.
WILLIAMSPORT, PA.

Letters to the Editor

Arkansas Prorated Production

DEAR SIR:

. . . I believe that the study "Prorated Production at Minimum Profit Level" of the July 29 issue of THE OIL WEEKLY to be the best article on the subject I have ever read. The scope of the article makes it of added value to the industry and all of those who believe in restricted production as an institution.

The profitability probabilities, overall, should be basically correct. While Arkansas is such a small percent of the large territory covered in the study and would make no material difference in the conclusions reached, I do believe that the picture in Arkansas will stand correction.

Out of the 2954 oil wells now producing in this state, only 326 are classed as scheduled or prorated wells; this for the reasons that (1) the conservation statute does not contemplate the restricting of production from stripper wells and (2) wide spacing is the order of the day.

Since we are concerned with prorated production, the 2628 wells producing an average of 10 barrels each day can be disregarded. The bulk of these wells have been producing for more than 12 years and have almost reached their economic limit. The scheduled, flush, or prorated production then takes this form:

Wells	326
Producing Acreage	9,994 acres
Daily Production	47,370 barrels
Average Spacing per well	30.7 acres
Production per well	145.0 barrels
Production per acre	4.7 barrels
Proven Reserves	226,033,000 barrels
Reserves per well	693,353 barrels
Reserves per acre	22,617 barrels
Cost per well	60,000 dollars
Price per barrel	$1.00
Cost per barrel	$ .25

Wide spacing is mandatory in Arkansas, and while the average spacing is 30.7 acres per well now, this acreage figure will become larger with more development. The average is brought down for the reason that one early pool is spaced on 20-acre drilling units.

Forty-acre units are the rule now, and daily production quotas follow that rule. Around the edges of the pools where it becomes necessary to drill fractional units, the allowables are reduced in proportion.

Proration is not based upon market demand in Arkansas. Each pool or field is allowed to produce upon an energy basis or at an optimum or most efficient rate. Market demand is used only as a ceiling in that unnecessary storage of oil is prohibited. Since the conservation law was put into effect in April, 1939, the bona fide demand in all instances has far exceeded the determined optimum rate of each scheduled pool.

Allocation of production within the pool to the various drilling units is based upon bottom-hole pressure times the size of the unit, or acre-pounds. Then, aside from giving full weight to acreage, the proration method tends to promote reservoir equilibrium, and thus prevent undue migration across properties and provide prorata use of natural energy. Gas/oil ratios are used as adjusting factors.

The conservation-proration concept in Arkansas was conceived by the industry and is fostered by the state. It is paying dividends.

Again, while I see the article in question as fact, it does not apply here.

A. M. CROWELL, *Director,*
Arkansas Oil and Gas Commission.

Other Comments

DEAR SIR:

Would like to take this opportunity to compliment you on your issue of July 29, and particularly on the two articles entitled "Prorated Production at Minimum Profit Level," and "Industry Faces Economic Crossroads." I have read both of these articles a number of times and certainly feel that the conditions as outlined are very definitely conditions with which the industry is faced at the present time.

If we are to avoid bureaucratic control, which unquestionably will result from Federal supervision, we must—not individually, but collectively—work towards a real solution of the current chaotic conditions.

Again complimenting you on these timely articles, I am

CHASE E. SUTTON,
Division Manager
The Pure Oil Company,
Houston, Texas

DEAR SIR:

I have so enjoyed reading in the issue of July 29, 1940, the articles on pages 41 and 46, that I feel an urge to express my pleasure and extend my congratulations.

They are quite the most brilliant thing I have read in a long time.

J. L. BLOCK,
Houston, Texas.

THE OIL WEEKLY

ENGINEERING « NEWS » STATISTICS

EDITORIAL STAFF
WARREN L. BAKER
Editor

J. KENT RIDLEY
Managing Editor

ASSOCIATE EDITORS
L. J. LOGAN — BRAD MILLS
WM. V. GROSS

DISTRICT EDITORS
B. F. LINZ.....Washington
BEN ALTMAN, FRANK TAYLOR.....Tulsa
H. H. KING.....Fort Worth
EARL S. POST.....San Antonio
R. W. BYRAM.....Austin
WM. H. STRANG, Z. H. MISCHKA, ELTON STERRETT, W. G. NORTH.....Houston

PUBLISHED BY
THE GULF PUBLISHING COMPANY
HOUSTON, TEXAS

R. L. DUDLEY, *President*
A. L. BURNS, *General Manager*
S. W. ROBINSON, *Editorial Director*
TOM W. NELSON, *Advertising Manager*

Staff correspondents at all important points.

Member Audit Bureau of Circulation
Member Associated Business Papers, Inc.

BRANCH OFFICES
NEW YORK.....250 Park Ave.
PITTSBURGH.....Vandergrift Bldg.
CHICAGO.....332 S. Michigan Ave.
LOS ANGELES..W. W. Wilson Bldg., Huntington Park, Calif.
TULSA.....Hunt Bldg.
FORT WORTH.W. T. Waggoner Bldg.
SAN ANTONIO.....Smith Young Tower Bldg.
WASHINGTON.....Albee Bldg.

ADVERTISING STAFF
DICK SWINSKY.....New York
C. A. WARDLEY.....Pittsburgh
H. G. FITZPATRICK.....Chicago
J. F. CARTER, JR.....Tulsa
JAY CURTS, JR.....Los Angeles
CHAS. WYATT.....Houston

CIRCULATION DEPARTMENT
J. T. WAGONER.....Manager

SPECIALIZED OIL JOURNALS
Published by
THE GULF PUBLISHING COMPANY

The Oil Man's Calendar

AUG. 17	West Texas Geological Society, Fall Meeting, Midland.
23	Interstate Oil Compact Commission, Oklahoma City, Oklahoma
SEPT. 9–13	American Chemical Society, Detroit.
18–20	National Petroleum Association, Atlantic City, N. J.
OCT. 4	Western Petroleum Refineries Association, Regional Meeting, Wichita.
7–10	American Gas Association, Atlantic City, N. J.
7–11	National Safety Congress and Exposition, Chicago.
16–18	Independent Petroleum Association of America, Dallas.
17–18	American Institute of Mining & Metallurgical Engineers, Petroleum Division, Los Angeles.
25	Western Petroleum Refiners Association, Regional Meeting, Shreveport.
31–NOV. 2	Texas Mid-Continent Oil & Gas Association, Ft. Worth.
NOV. 1	California Natural Gasoline Association, Los Angeles.
11–15	American Petroleum Institute, Chicago.
1941 APR. 2–4	American Association of Petroleum Geologists, Houston.
24–25	National Petroleum Association, Semi-Annual Meeting, Cleveland.

Contents « August 12, 1940
Volume 98, Number 10

The Week's Panorama 13

Feature Section:

Surplus Gasoline and Limited Exports Chief Handicaps 14
BY L. J. LOGAN

Mobile Pump House Paces River Stages at Flood Project 17
BY FRANK B. TAYLOR

Distillate Fields Bring New Production Phase 19
BY BRAD MILLS

Public Relations 35

News Section and Index 51

Looking Ahead with the Editor 4

Letters 6

Drilling Contractors' Note Book 46

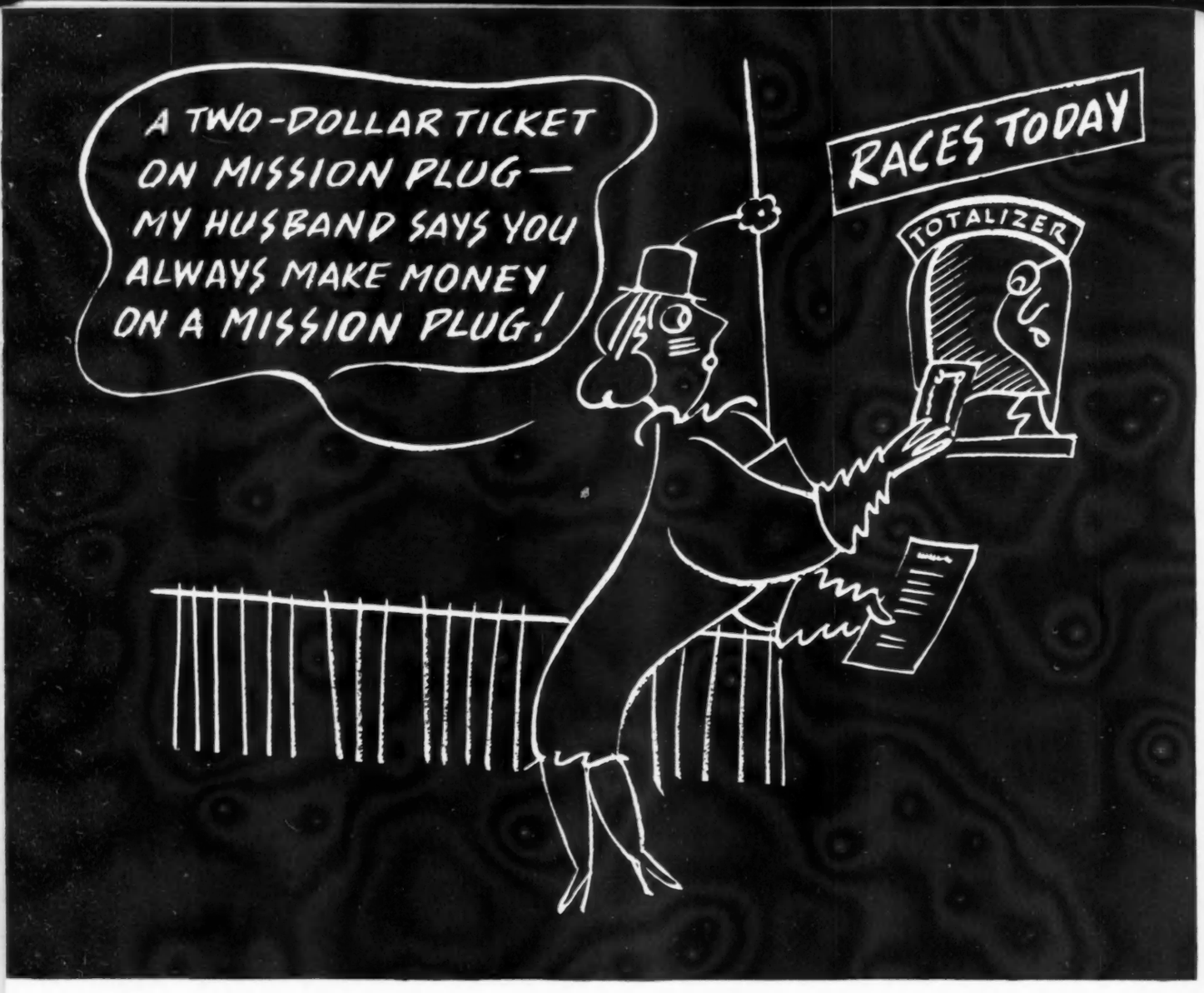
Notes for the Equipment Buyer and User 77

Squeaks from the Bull Wheel 81

Index to Advertisers 82

Published every Monday. Single Copies 15 cents (Special Issues 50c). Subscription price: domestic and foreign, $2.00 a year; 2 years $3.00. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879. Subscription restricted to those engaged in the producing and pipe line branches of the oil industry or the manufacturing and distribution of oil field supplies. Advertising rates on application.

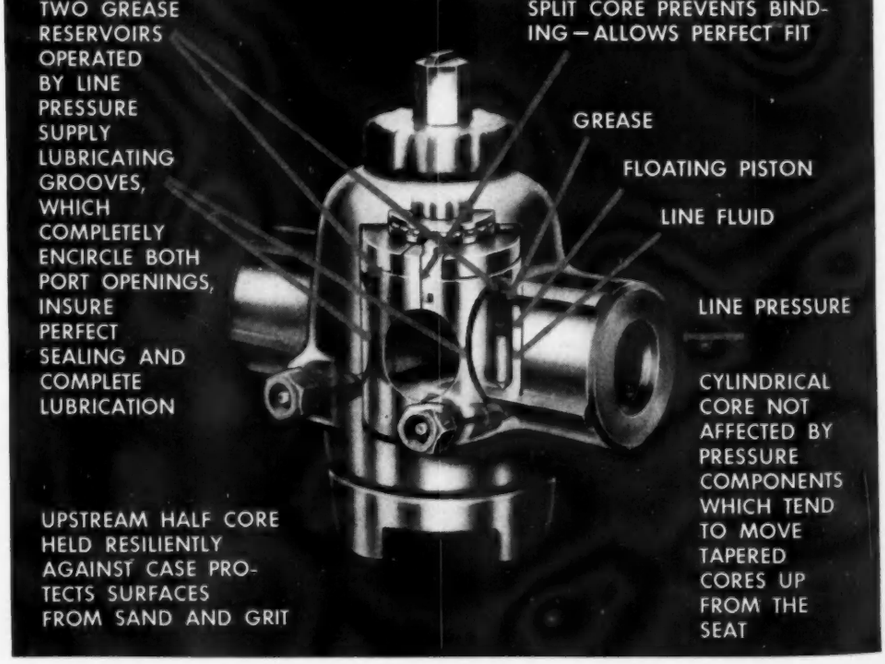
Copyrighted 1940, by The Gulf Publishing Company.



You will make money without gambling — with MISSION PLUG VALVES

Line pressure lubrication maintains a constant perfect seal and prevents cutting. The super-surfaced core resists wear and allows a perfect fit which prevents accumulation of gritty material. These features assure you of extremely long wear.

- Used on drilling rigs, flow lines and Christmas trees and in re-pressuring plants for 24 months without failure.
- Manufactured in 2″, 3″, 4″ sizes — in three grades to meet working pressures of 2000, 3000 and 5000 lbs.
- Available at leading oil well supply warehouses. Install Mission valves in your most difficult conditions.


TWO GREASE RESERVOIRS OPERATED BY LINE PRESSURE SUPPLY LUBRICATING GROOVES, WHICH COMPLETELY ENCIRCLE BOTH PORT OPENINGS, INSURE PERFECT SEALING AND COMPLETE LUBRICATION
SPLIT CORE PREVENTS BINDING — ALLOWS PERFECT FIT
GREASE
FLOATING PISTON
LINE FLUID
LINE PRESSURE
CYLINDRICAL CORE NOT AFFECTED BY PRESSURE COMPONENTS WHICH TEND TO MOVE TAPERED CORES UP FROM THE SEAT
UPSTREAM HALF CORE HELD RESILIENTLY AGAINST CASE PROTECTS SURFACES FROM SAND AND GRIT

MISSION MANUFACTURING COMPANY

HOUSTON, TEXAS

NEW YORK EXPORT OFFICE: 30 ROCKEFELLER PLAZA

THE OIL WEEKLY

AUGUST 12, 1940

VOLUME 98 NUMBER 10

The Week's Panorama

THROUGH a telescope, the oil industry of the future appears taller and broader than that of today. Further increases in the established uses for petroleum are indicated, and important new uses are foreseen. Catapulted into the limelight lately have been two new uses: for making synthetic rubber and for making toluene, basic ingredient of the explosive TNT. In view of the nation's desire to become independent of foreign sources of natural rubber, it is probable that the petroleum industry eventually will provide a large part of the country's rubber requirements. Mass production possibly will provide synthetic rubber more cheaply than natural rubber is being obtained.

• • • Other companies among the 41 charged with gasoline price fixing on the Pacific Coast are expected to follow the course taken by the several concerns that changed their pleas of innocence to *nolo contendere* and were fined $4500 each. The action was not admission of guilt but only decision not to contest the charges. The fines are small compared with expense of offering defense in the courts.

• • • Awaited with interest last week was the Justice Department's action in the case it has prepared charging anti-trust law violations on the East Coast. The department was due to obtain immediately the recommendations of the National Defense Advisory Commission as to whether filing of the suit would interfere with the oil industry's role in the national defense program. The commission pointed out that success of the suit would require substantial changes in the entire economic set-up of an industry considered basic to national defense. . . . The suit is aimed at divorcement of pipe lines from other oil company operations; but disintegration of oil companies might be undesirable from a national defense standpoint, considering problems relating to pipeline transportation, manufacture of synthetic rubber, and making of toluene.

• • • Time required for the national defense program to get going has been estimated as follows: around 6 months for the first real effects in the form of orders for machine tools, structural steel, and other standardized materials; 9 months or more for commencement of production of newly designed equipment in newly built plants; and 1 to 2 years for mass production of tanks, armor plate, and air-cooled airplane engines.

• • • Sales of road oil in the United States rose 5 percent in 1939, having totaled 8,108,000 barrels, compared with 7,741,843 in 1938. But the average value was down to $1.04 from $1.22 a barrel. The gain in sales reflected increased construction of oil-treated macadam, gravel, and sand-clay highways.

• • • Col. Philip B. Fleming, administrator of the federal labor law, indicated to the President that despite the national defense plans he foresaw no necessity for raising the ceiling for hours, above which time and one half must be paid. He said World War experience in Great Britain and also experience in Germany prior to outbreak of the present war had demonstrated that production decreased with excessive lengthening of working hours.

• • • Employment of idle workers may result instead of working overtime, and from such increases in the number of employed, the oil industry should benefit.

• • • Although Bureau of Mines figures on gasoline demand in the United States in June and July, 1940, are not yet available, it is regarded as highly probable that they will show material gains over the same period last year. . . . In June, due to the impending federal tax which took effect July 1, there were heavy orders placed by dealers. The effect of that advance-ordering was consequently felt in July. But taking the two months in the aggregate and comparing them with the corresponding two months in 1939, it is thought probable that the increase amounted to 6 or 7 percent—a new all-time record for the two months.

• • • The petroleum industry is estimated to contribute roundly $4,500,000,000 to the national economy every year in the form of wages, purchases, transformation of raw material into finished products, taxes, and in other ways. Study of the financial reports of oil companies indicates that this dollar distribution extends from the largest to the smallest, and that the greater portion of funds coming into a company's treasury immediately goes into widespread circulation.

One company last year put 99 percent of its income into circulation, keeping only one percent for the proverbial rainy day. Of the income dollar, 32 cents was paid for crude oil, natural gasoline and other raw materials; 20½ cents for wages and salaries; 18½ cents for taxes; 11 cents to replace worn or obsolete equipment; 10 cents for supplies and operating expenses; 5½ cents in dividends to stockholders; and 1½ cents for interest on indebtedness.

Surplus Gasoline and Limited Exports Chief Handicaps

By L. J. LOGAN, Associate Editor

ABOUT 20 oil companies have reported their earnings for the second quarter as well as the first three months of 1940, and the information affords a yardstick for measuring results in the initial half of the year. The figures also throw more light on prospects for the latter half of 1940.

Profits of the group in the first six months of 1940 were over twice as large as in the corresponding months of 1939 and closely approximated the earnings for the whole year 1939. The first-half results this year were among the best in the history of the industry, having been comparable with those in 1937 and 1929.

However, the extraordinary record for the first half of 1940 resulted largely from the advantageous conditions that prevailed in the initial quarter, the second quarter having failed to equal the first in opportunity for profit.

While earnings in the second quarter of 1940 were substantially better than in the second quarter of 1939, they fell somewhat short of the profits in the first quarter of 1940. That decline from the first to the second quarter of this year was contraseasonal, the June quarter usually being more profitable than the March quarter, because of better weather for the use of gasoline.

The good results in the first three months of 1940 reflected record-breaking sales of heating oil and somewhat improved gasoline prices.

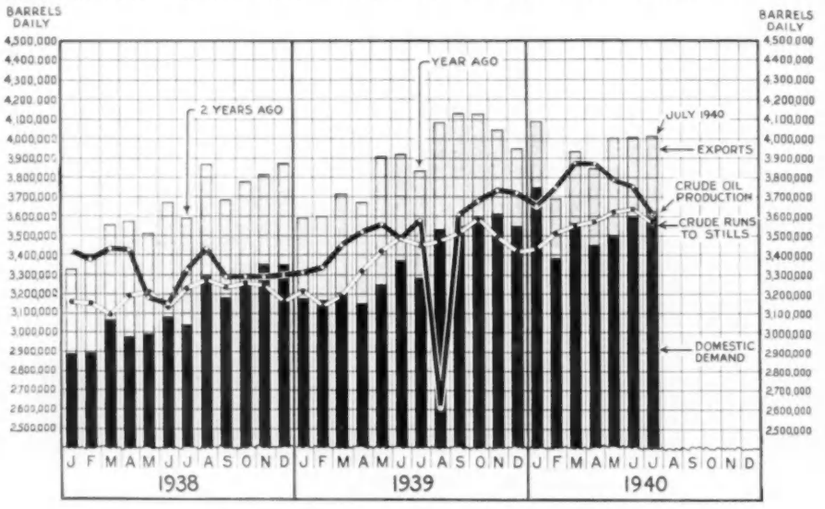
But, in the second quarter, heating oil business was waning seasonally, and gasoline prices continued the decline that got under way in the initial quarter. Consequently, the oil companies in the aggregate had less net income in April, May, and June than in January, February, and March.

For the latter half of 1940, moreover, earning power will be circumscribed by several unfavorable circumstances, especially the continued weak market for gasoline and the greatly curtailed volume of export business.

It is doubtful, in fact, if latter-half earnings will be as large this year as they were last year. For product prices improved materially late last summer and were comparatively good in the closing four months of the year, while they currently are down substantially from the levels that they reached late in 1940, with prices of gasoline, principal product of the industry, at the lowest level since the middle of 1933.

Furthermore, total volumes of

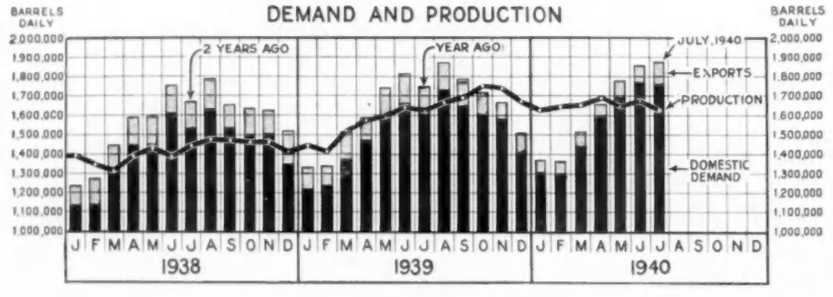
DEMAND FOR ALL U.S. OILS - CRUDE OIL PRODUCTION - REFINERY RUNS


BARRELS DAILY
2 YEARS AGO
YEAR AGO
JULY 1940
EXPORTS
CRUDE OIL PRODUCTION
CRUDE RUNS TO STILLS
DOMESTIC DEMAND
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1938
1939
1940

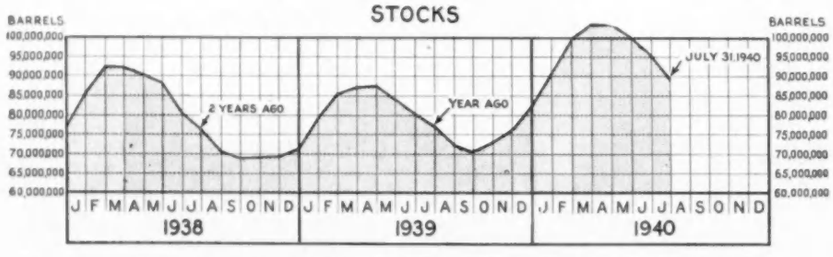
Source: Bureau of Mines except data for June and July, 1940, which are estimates.

GASOLINE SITUATION

DEMAND AND PRODUCTION


BARRELS DAILY
2 YEARS AGO
YEAR AGO
JULY 1940
EXPORTS
PRODUCTION
DOMESTIC DEMAND
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1938
1939
1940

STOCKS



Source: Bureau of Mines except data for June and July, 1940, which are estimates.

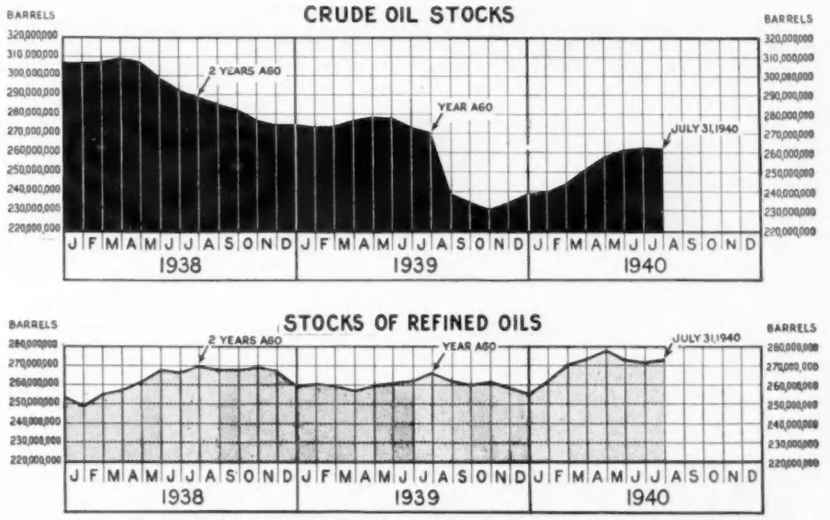
business lately have not been much, if any, larger than a year ago, as gains in domestic sales have been largely offset by curtailment of exports.

In the latter half of 1940, therefore, the oil industry may not be able to equal its earnings record of the similar period of 1939, with its over-all volume of business little, if any, greater, and with prices of petroleum products lower.

The prospects would be improved, of course, if the national defense program should result in an extraordinary pick-up in domestic demand for oils in the closing months of this year, a possible development that offers the most promise among those now on the horizon.

However, it appears that orders and spending for national defense will not materially stimulate employment and business activity until October or November, at the earliest; and it is doubtful, therefore, if any sharp increase in petroleum consumption will occur before the end of this year.

The industry is generally reconciled to the probability that volumes of export business will continue greatly curtailed in the latter half of 1940, and it is anticipated that shipments abroad may be even lower in 1941. The export outlook is distinctly unfavorable regardless of further developments in the Eu-



STOCKS OF REFINED OILS
BARRELS
2 YEARS AGO
YEAR AGO
JULY 31, 1940
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1938
1939
1940

Source: Bureau of Mines except data on refined oils for June and July, 1940, which are estimates.

Changes From Year Ago in Stocks of Crude and Refined Oils in the United States

(Figures indicate barrels)

LATEST WEEKLY DATA

(Sources: Crude stocks, Bureau of Mines; all other figures American Petroleum Institute.)

STOCKS OF:	July 27 1939	July 27 1940	Percent Change
Gasoline	78,158,000	90,173,000	+15.4
Gas Oil & Distillate	34,893,000	38,981,000	+11.7
Residual Fuel Oil	115,162,000	105,924,000	— 8.0
Crude Oil	268,513,000	262,579,000	— 2.2

LATEST MONTHLY DATA

(Source: Bureau of Mines.)

ITEM	STOCKS AT END OF MAY 1939	1940	Percent Change
SUMMARY—			
Crude Petroleum:			
Refinable in U. S.	278,087,000	261,839,000	— 5.8
Heavy in California	14,492,000	13,265,000	— 8.5
Natural Gasoline	6,212,000	6,514,000	+ 4.9
Refined Products	270,177,000	282,176,000	+ 4.4
Total, all oils	568,968,000	563,794,000	— 0.9
Day's supply:			
May Basis	147	144	— 2.0
5 Months Basis	153	145	— 5.2
PRODUCTS—			
Gasoline:			
Finished	78,342,000	93,474,000	+19.3
Unfinished	5,858,000	7,385,000	+26.1
Total	84,200,000	100,859,000	+19.8
Aviation Gasoline (Included above)	.....	3,942,000	.....
Kerosene	6,551,000	5,309,000	—18.9
*Gas Oil & Distillate Fuels	22,088,000	23,112,000	+ 4.6
*Residual Fuel Oils	92,485,000	84,210,000	— 9.0
Lubricants	7,630,000	8,170,000	+ 7.1
Wax (pounds)	113,925,000	103,289,000	— 9.3
Coke (short tons)	716,000	681,000	— 4.9
Asphalt (short tons)	672,000	759,000	+12.9
Road Oil	1,219,000	1,360,000	+11.6
Miscellaneous	301,000	405,000	+34.6
Other Unfinished Oils	38,036,000	40,070,000	+ 5.4

* At refineries only.

Total Oil Demand Up in 1940 Despite Smaller Exports

Figures indicate barrels, and are from Bureau of Mines

	MAY			FIRST FIVE MONTHS		
	1939	1940	Percent Change	1939	1940	Percent Change
SUMMARY						
Total Demand	120,382,000	121,190,000	+ 0.7	560,619,000	592,314,000	+ 5.7
Daily average	3,833,000	3,909,000	+ 0.7	3,713,000	3,897,000	+ 5.0
Exports:						
Crude petroleum	8,643,000	4,886,000	— 43.5	29,118,000	20,723,000	— 28.8
Refined products	12,128,000	7,541,000*	— 37.8	48,049,000	35,200,000	— 26.8
Total exports	20,771,000	12,427,000	— 40.2	77,167,000	55,923,000	— 27.6
Domestic Demand:						
Total domestic demand	99,611,000	108,763,000	+ 9.2	483,452,000	536,391,000	+ 11.0
Daily average	3,213,000	3,508,000	+ 9.2	3,202,000	3,529,000	+ 10.2
TOTAL DEMAND FOR PRODUCTS						
Motor Fuel:						
Domestic	49,547,000	52,946,000	+ 6.9	208,406,000	223,163,000	+ 7.1
Exports	4,390,000	1,992,000†	— 54.6	18,936,000	10,509,000	— 44.5
Total	53,937,000	54,938,000	+ 1.8	227,342,000	233,672,000	+ 2.8
Aviation Gasoline:						
(included above):						
Domestic	‡	455,000	.....	‡	2,001,000	.....
Export	691,000	415,000	— 40.0	2,141,000	1,246,000	— 41.8
Total	.....	870,000	.....	.....	3,247,000	.....
Kerosene:						
Domestic	4,368,000	5,297,000	+ 21.2	26,492,000	31,096,000	+ 17.4
Exports	653,000	386,000	— 40.9	3,254,000	1,959,000	— 39.8
Total	5,021,000	5,683,000	+ 13.2	29,746,000	33,055,000	+ 11.1
Gas Oils & Distillate Fuels:						
Domestic	7,523,000	10,059,000	+ 33.7	64,032,000	79,480,000	+ 24.1
Export	4,004,000	2,130,000	— 46.8	13,079,000	9,197,000	— 29.8
Total	11,527,000	12,189,000	+ 5.7	77,111,000	88,677,000	+ 15.0
Residual Fuel Oils:						
Domestic	25,047,000	26,017,000	+ 3.9	131,987,000	142,388,000	+ 7.9
Export	1,854,000	1,379,000	— 25.6	7,693,000	5,751,000	— 25.2
Total	26,901,000	27,396,000	+ 1.8	139,680,000	148,139,000	+ 6.1
Lubricants:						
Domestic	2,132,000	2,063,000	— 3.2	9,151,000	9,660,000	+ 5.6
Exports	981,000	1,173,000	+ 19.6	4,157,000	5,684,000	+ 36.7
Total	3,113,000	3,236,000	+ 4.0	13,308,000	15,344,000	+ 15.3
Wax (pounds):						
Domestic	28,533,000	24,103,000	— 15.5	111,433,000	125,198,000	+ 12.4
Export	16,045,000	22,404,000	+ 39.6	100,024,000	116,611,000	+ 16.6
Total	44,578,000	46,507,000	+ 4.3	211,457,000	241,809,000	+ 14.4
Coke (short tons):						
Domestic	117,400	111,400	— 5.1	552,600	567,500	+ 2.7
Export	32,800	23,000	— 29.9	84,300	86,300	+ 2.4
Total	150,200	134,400	— 10.5	636,900	653,800	+ 2.7
Asphalt (short tons):						
Domestic	493,400	466,000	— 5.6	1,403,100	1,315,000	— 6.3
Exports	2,900	30,800	.....	20,200	122,500	.....
Total	496,300	496,800	+ 0.1	1,423,300	1,437,500	+ 1.0
Road Oil:						
Domestic	695,000	611,000	— 12.1	1,543,000	1,112,000	— 27.9
Miscellaneous:						
Domestic	214,000	139,000	— 35.0	908,000	693,000	— 23.7
Exports	9,000	117,000	+1200.0	40,000	579,000	+1348.0
Total	223,000	256,000	+ 14.8	948,000	1,272,000	+ 34.2

* Exclusive of 14,000 barrels exported from non-contiguous territories but inclusive of 638,000 barrels shipped from U. S. to territories. † Includes benzol, 30,000 barrels in May, 1940. ‡ Not available.

Oil Exports Down Sharply in First Nine Months of War

Figures indicate barrels, except as otherwise noted, and are from Bureau of Mines

ITEM	NINE MONTHS PERIOD			MONTH OF MAY		
	Ended May 31, 1939	Ended May 31, 1940	Percent Change	1939	1940	Percent Change
Crude Oil	51,960,000	44,578,000	— 14.2	8,643,000	4,886,000	— 43.5
Products:						
Motor fuel	36,111,000	23,880,000	— 33.9	4,390,000	[6]1,992,000	— 54.6
Aviation gasoline (included above)	[2]2,141,000	[2]2,179,000	+ 1.8	691,000	415,000	— 40.0
Kerosene	5,882,000	4,662,000	— 20.8	653,000	386,000	— 40.8
Gas oil and distillate	21,764,000	19,082,000	— 12.3	4,004,000	2,130,000	— 46.4
Residual fuel oil	14,023,000	11,107,000	— 20.8	1,854,000	1,379,000	— 25.6
Lubricants	7,099,000	10,181,000	+ 43.4	981,000	1,173,000	+ 19.6
Wax (pounds)	184,946,000	192,989,000	+ 4.3	16,045,000	22,404,000	+ 39.6
Coke (short tons)	158,900	184,200	+ 15.9	32,800	23,000	— 29.9
Asphalt (short tons)	38,300	[3]435,000	.....	2,900	30,800	.....
Miscellaneous	79,000	642,000	+ 713.0	9,000	117,000	+1200.0
[4]Total Refined Products	85,645,000	71,682,000	— 16.3	12,128,000	[5]7,541,000	— 37.8
Total Crude & Products	137,605,000	116,260,000	— 15.5	20,771,000	12,427,000	— 40.2

[1] September, October, November, 1938, not included. [2] September, 1939, not included. [3] Beginning January, 1940, includes both manufactured and unmanufactured asphalt; only unmanufactured asphalt being previously shown. [4] Not the sum of the above figures, some of which do not indicate barrels. [5] Exclusive of 14,000 barrels exported from non-contiguous territories, but inclusive of 638,000 barrels shipped from U. S. to territories. [6] Includes benzol, 30,000 barrels in May, 1940.

ropean war, and defeat of Great Britain would be only another blow in a beating for the oil industry of the United States.

The outlook for the gasoline market, likewise, is not very promising, at best. For the surplus of that product currently on hand is so large as virtually to preclude any marked improvement in prices at least until next spring.

Rates of withdrawal from gasoline storage in recent weeks have indicated that the industry is likely to have on hand around 80,000,000 barrels of gasoline on September 30, at the beginning of the fall-winter period of curtailed consumption, when seasonal accumulation of stocks occurs.

Such a quantity would be about 15,000,000 barrels in excess of actually needed stocks as of September 30, for economists regard about 65,000,000 barrels as sufficient at that time.

Even if the inventory were cut down by September 30 to 75,000,000 barrels, an achievement that would require average withdrawals of 1,600,000 barrels weekly between now and then, the stocks still would be 10,000,000 barrels above the indicated minimum requirements. And such a surplus would be a serious handicap, which would make extremely difficult the holding down of the gasoline inventory to a satisfactory level as of March 31 next year.

Not yet within sight, therefore, is any noteworthy improvement in the gasoline market, and for the rest of this year and the early part of next year the outlook is uninspiring.

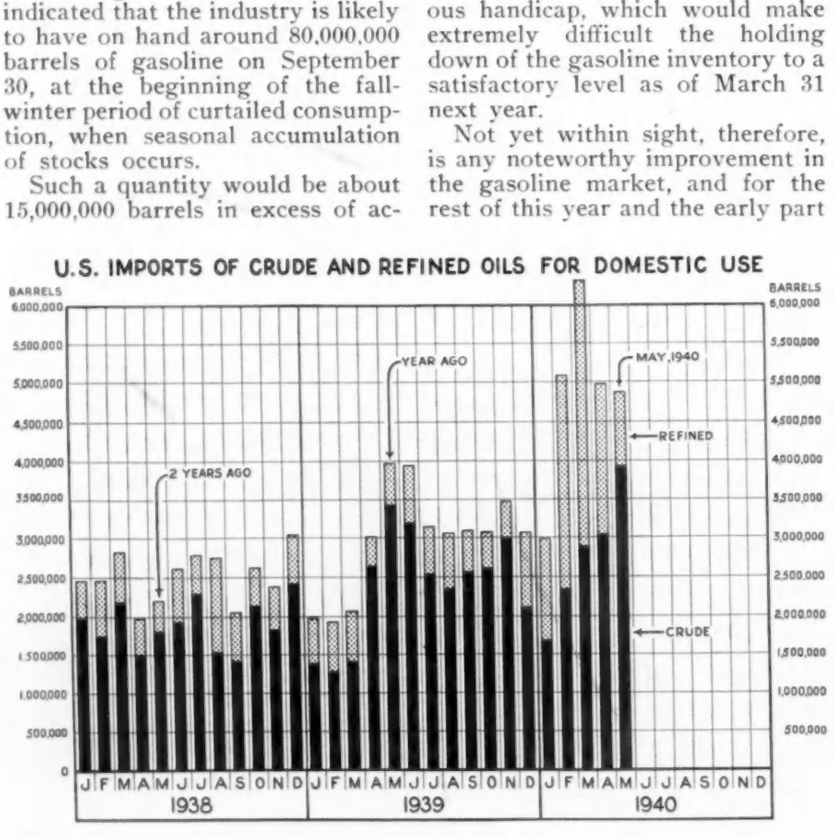
Currently, gasoline stocks are about 12,000,000 barrels higher than a year ago; and the gain largely represents surplus gasoline. For the stocks of a year ago were quite adequate for meeting market requirements, and total demand currently is only a little greater than last year, as the increase in domestic consumption has been offset to a considerable extent by the decline in exports.

The industry could reduce the excess of gasoline in storage by cutting down the yield of that product and raising the yield of light fuel oil; and such action also would tend to hold down next fall and winter the forced production of gasoline in conjunction with the turning out of seasonally large quantities of heating oil. However, there has not been, so far, much effort to turn the yields of gasoline and light fuel oil to advantage, despite considerable publicity on the subject.

While gasoline prices are extremely low, the markets for most of the other refined products are relatively good, despite some marking down of prices in the past several months.

The crude oil markets, similarly, are steady, and the recent threat of a general crude cut in the Mid-Continent has been virtually eliminated.

U.S. IMPORTS OF CRUDE AND REFINED OILS FOR DOMESTIC USE



Source of data: Bureau of Mines.

Oil Imports for Domestic Use Up Sharply

Figures indicate barrels and are from Bureau of Mines.

MONTH	Crude Oil	Refined Products	Total
January:			
Jan., 1939	1,373,000	609,000	1,982,000
Jan., 1940	1,664,000	1,321,000	2,985,000
Percent Change	+21.2	+117.1	+52.0
February:			
Feb., 1939	1,266,000	654,000	1,920,000
Feb., 1940	2,343,000	2,731,000	5,074,000
Percent Change	+85.0	+320.0	+164.0
March:			
Mar., 1939	1,404,000	659,000	2,063,000
Mar., 1940	2,895,000	3,410,000	6,305,000
Percent Change	+106.2	+417.4	+205.6
April:			
April, 1939	2,648,000	366,000	3,014,000
April, 1940	3,041,000	1,948,000	4,989,000
Percent Change	+14.8	+432.0	+65.5
May:			
May, 1939	3,434,000	529,000	3,963,000
May, 1940	3,921,000	934,000	4,855,000
Percent Change	+14.2	+76.5	+22.5
1st 5 Months:			
1939	10,125,000	2,690,000	12,815,000
1940	13,864,000	10,344,000	24,208,000
Percent Change	+36.9	+284.4	+88.9

Mobile Pump House Paces River Stages at Flood Project

By FRANK B. TAYLOR, Staff Writer

THE prime necessity of a waterflood development being a constant and dependable source of water, an operator must first of all obtain an assured supply. To guarantee against possible damages that can and frequently do result from shutdowns, the water supply system must be protected. In the utilization of water from rivers and streams a unique problem is presented by a water stage which may vary 30 or more feet.

Kirby Oil Company at its project northeast of Chanute, Kansas, has overcome this by constructing a mobile and unitized intake unit for the Neosho River pump station. The river at this point could obtain a stage variation of 20 feet with flush rains, and presumably could exceed 40 feet above a minimum. The usual intake box would not have been adequate, nor would a floating intake have been sufficient guarantee against interruption of supply.

Customary methods being of questionable value under the circumstances, an inclined track was constructed of 4-inch pipe. Crossmembers beneath each of the two sides of the track are of the same pipe, with 4-inch risers, 50-inches apart, supporting each track or "rail." These are spaced the entire length of the incline where it is above the ground level. At the lower, or river end, the track is submerged in the water while at the upper terminal it ends at an operators platform supported 10 feet above ground by 4-inch pipe stands. A guard rail protects the workers.

The water intake pumping station is a unit house riding the incline of 4-inch pipe. The floor of the house is 5x10 feet, with the rear, or river end, 2½ feet higher above the rails than the upside end. This keeps the floor of the house level at all times as the grade of the incline is constant at 18.5 degrees. Spaced beneath the floor of this

Down length of track toward Neosho River from which flood water is procured. Pump house is near lower end of track.

house and resting upon the rails are 8 short lengths of pipe cut to conform with the outside diameter of the 4-inch rails, four of the riders being on either side of the house.

A 4-cylinder gas engine is belt-connected to a 3x2-inch centrifugal pump taking water from the river and discharging it into the plant line. As the position of the house relative to the fixed plant line is subject to change, discharge from the pump is through 23-feet of 3-inch drilling hose, thus giving 40 feet play before another connection is necessary. Discharge from the hose is into a boxed riser from the plant water line. When a considerable change in position of the unit on the incline is required, the 3-inch hose is disconnected and reconnected at another available riser, also boxed.

Provision has been made to connect the gas intake at any point on the incline. For this purpose the fuel line is supported on hangers welded to the outside of one of the rails. Eight tie-in stations are available for connecting fuel supply. Gas is fed into the system through a 6-inch vertical trap fixed to one of the platform stanchions.

The pumping house and powered pump is raised or lowered on the rails, by a winch mounted 3 feet above the floor of the platform. A 9/16-inch wire line is used on the winch drum with the cable going through a double pulley on a spreader a few feet in front of the pump house, through a single pulley at the platform, back through the double to be fixed at the winch. This gives a 4-line hookup to make the drag load not too great for one man on the winch.

In lowering the pump house to a new position, the intake into the river can be supported on a skid thrown across the two rails. This keeps it from digging into the dirt. A muffler at the lower end, generally used, keeps fish and waste matter from entering the pump suction. To facilitate raising the unit on the rails, a heavy lubricant is used.

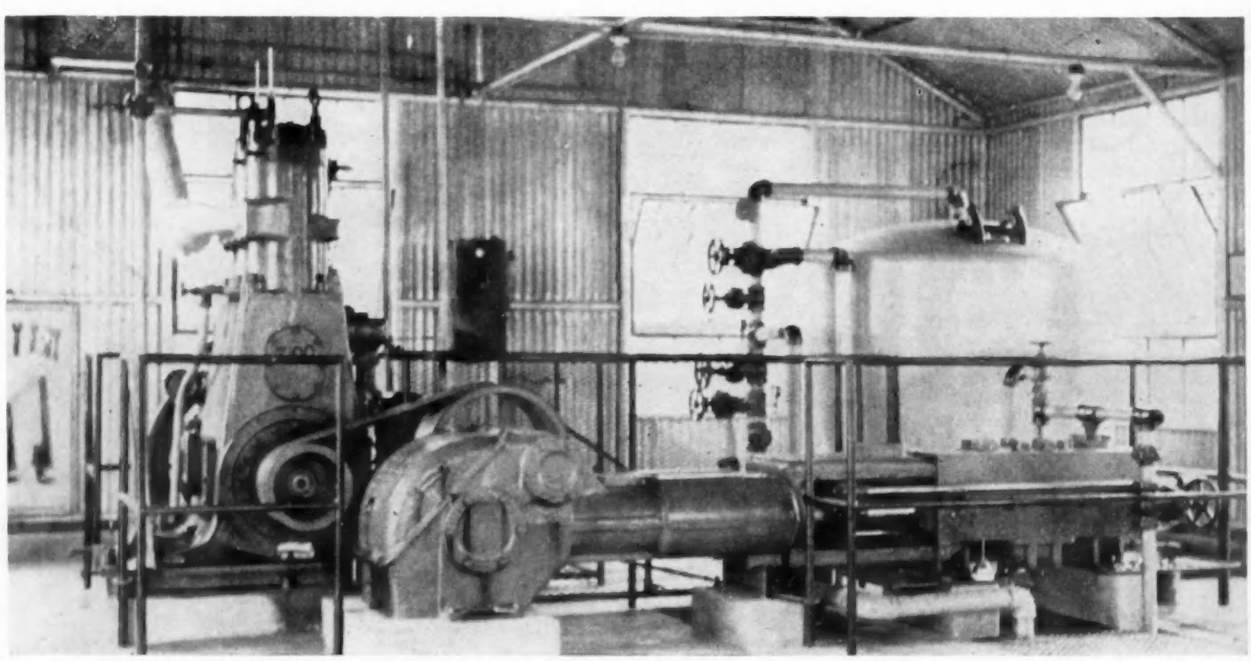
The Flood Operation

Kirby Oil Company has 320 acres under partial flood in a progressive project. Twenty-nine input wells are being used with additional wells being drilled as demanded. Production is from Bartlesville sand, 770 feet, where about 20-feet of pay is cut. Lifting is by jacks with central-power drives.

Station equipment consists of a 9x10-inch, 2-cylinder vertical gas engine belt-driving a 3x10-inch, horizontal, high-pressure water pump. This pump supplies flood water to the input wells at 450 pounds plant discharge pressure. Also driven from the main unit by V belt is a circulating pump and a 4-KW, AC-DC direct connected generator. Within the main station house is a small, gasoline fueled electric plant and an air compressor. The latter includes a gasoline engine driving a compressor, each mounted upon a horizontal receiving tank.

Water from the river is received in a wood storage tank, is baffled, chemically treated, allowed to settle and is filtered prior to being taken up by the main pump unit. An electrically-driven feeder discharges a combination soda-alum treatment into the raw water, about 50-pounds proving satisfactory in the handling of 1400 barrels of water per day. The filter is an enclosed sand-gravel type, larger than present water requirements demand in anticipation of an expanded project in the future. The main engine room is so arranged that equipment is not crowded, and there is space left for additions as may be necessary.

Water for the input wells is carried by an integral system, with present volumes not taxing the pump or the filter which is being back-washed twice daily. Water is metered to give control to the flooding.



Power, pump and filter at operation station. Provision has been made for future expansion.

Distillate Fields Bring New Production Phase

By BRAD MILLS, Associate Editor

Recycling

PART III

PRESENTED herewith is the third article in the symposium discussion on recycling which began in the July 29 issue of THE OIL WEEKLY. It is the purpose of these articles to provide data showing the extent of recycling operations and the various methods employed in this newest production phase. The next article will describe some of the more prominent plants using the absorption method. The completed symposium will comprise the first complete discussion to be presented on all phases of recycling from the standpoint of the producing industry.

PREVIOUS articles in this series have been devoted to the economic aspects of recycling operations and their application in modern production practice with descriptions of plants employing the simple separation method used in such operations. Herewith descriptions are given of plants using temperature reduction for extracting liquids from distillate production and commonly referred to as Refrigeration-Separation systems.

Tide Water Associated-Seaboard Plants

Three large recycling plants have been built in Anderson County by Tide Water Associated Oil Company and Seaboard Oil Company as joint operators. Two plants are located in the Cayuga field and one in the Long Lake field, the three plants being connected closely enough to be classified as one unit. General design of all plants is similar, but each installation varies some in construction and operating details.

This major recycling effort in two fields is the outgrowth of experimental work begun late in 1936 by William H. Vaughan, who had been developing a process for recovering liquid hydrocarbons from certain wet gasses without serious pressure loss. The three plants have a capacity of 125 million feet daily.

These three plants depend largely on refrigeration for profitable recovery of liquefied hydrocarbons from the wet gas. The process achieves extraction of condensate at low temperatures and high pressures, a condition that makes possible the return of dry gas to the producing formation at reasonable expense.

During the experimental work ahead of major plant construction, gas was treated with a miniature plant, using pressure control for temperature drop accompanying expansion, and employing dry ice for refrigeration. This arrangement greatly increased the drop in temperature ordinarily accompanying expansion of the gas, over the Natural (Joule-Thompson) results.

The Long Lake plant might be called the key installation of the three, being also the largest and the one used for further stabilizing and finishing the condensate from the two Cayuga plants. It was designed to handle 60 million feet of gas daily, with a recovery of around 60,000 gallons of distillate daily. A complete rerun and stabilization unit is operated at this plant for reworking products of all plants.

The plant was designed for a 1500-1600-pound operating pressure and temperatures as low as —20° F. The installation is the embodiment of improvements developed through experience, and while operating at an accumulator pressure of 1500 pounds and 0° F. more than 95 percent of the pentanes plus, 87.5 percent of the normal pentanes, 94.5 percent of the isopentanes and 70 percent of the normal butane are recovered. These recoveries are based on medium-rich gas, and higher recoveries are possible when handling comparatively rich gases.

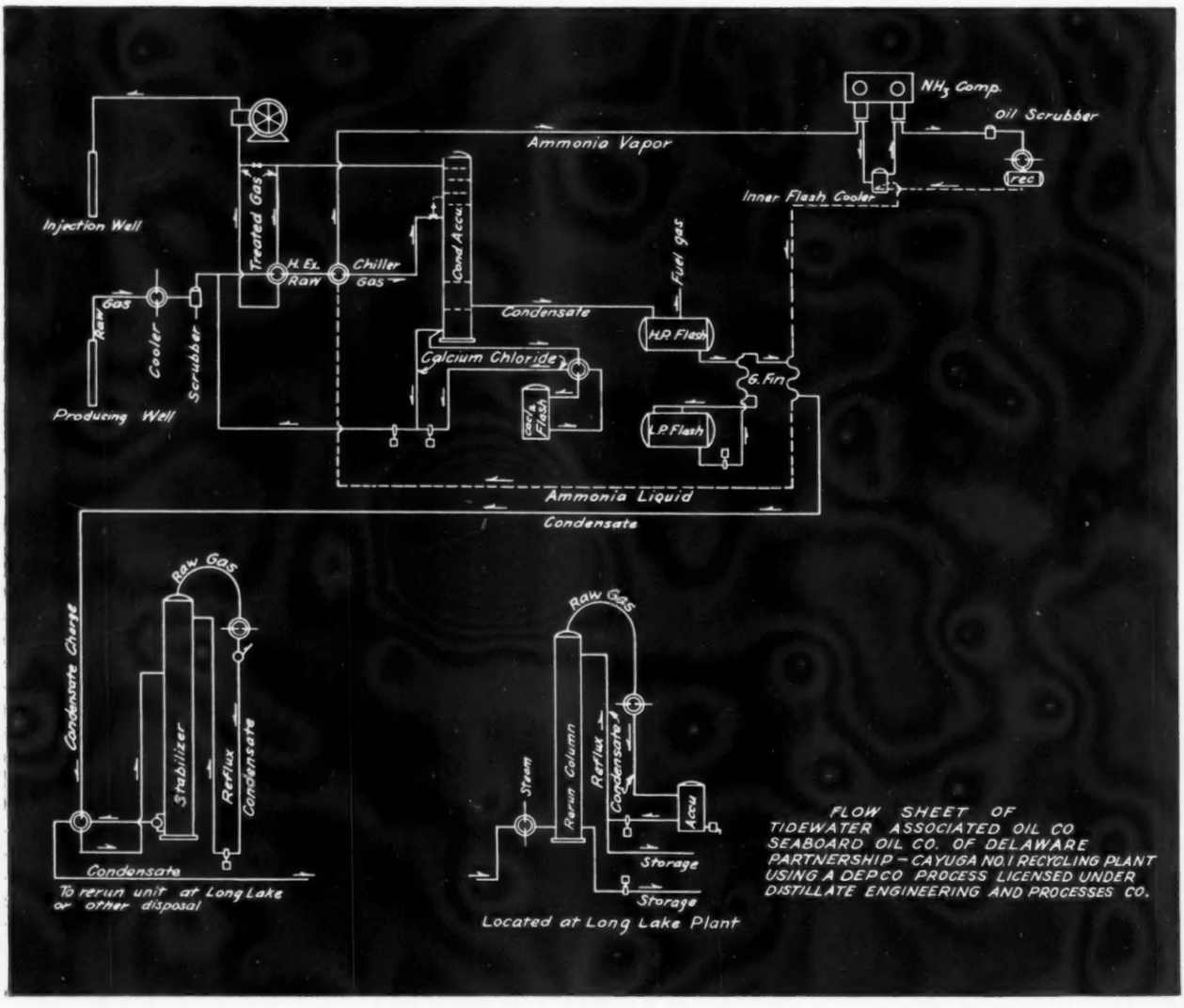
The plant employs the refrigeration process, with countercurrent circulation of a small quantity per 100 cubic feet of heavy oil. A calcium chloride brine is injected into the incoming gas stream after the gas has passed through the water-to-gas cooler and the free-water drip. Use of this brine as a dehydrating medium permits much lower separation temperatures and improved operating efficiency than could be obtained without its use.

Most of the condensate recovered is separated in the lower section of the accumulator. Bubble trays are built into the upper section of the accumulator to facilitate the recovery of such desirable remaining hydrocarbons as propane, normal and isobutane and isopentane. Recovery of these high-octane hydrocarbons is accomplished by circulating a small amount of heavier product.

Use of low temperatures in the accumulator does not give as high an extraction of methane, proportionately, as the increase in the extraction of more desirable fractions. Bulk of the methane and ethane may be removed by flashing the condensate in a flash system operating at low temperature. Loss of desirable hydrocarbons is negligible, since the condensate, already at low temperature, is reduced to still lower temperature by vaporization and expansion. A high-pressure fractionator was

Tide Water Associated—Seaboard Oil Company

Cayuga, Long Lake, Texas, Recycling Plants

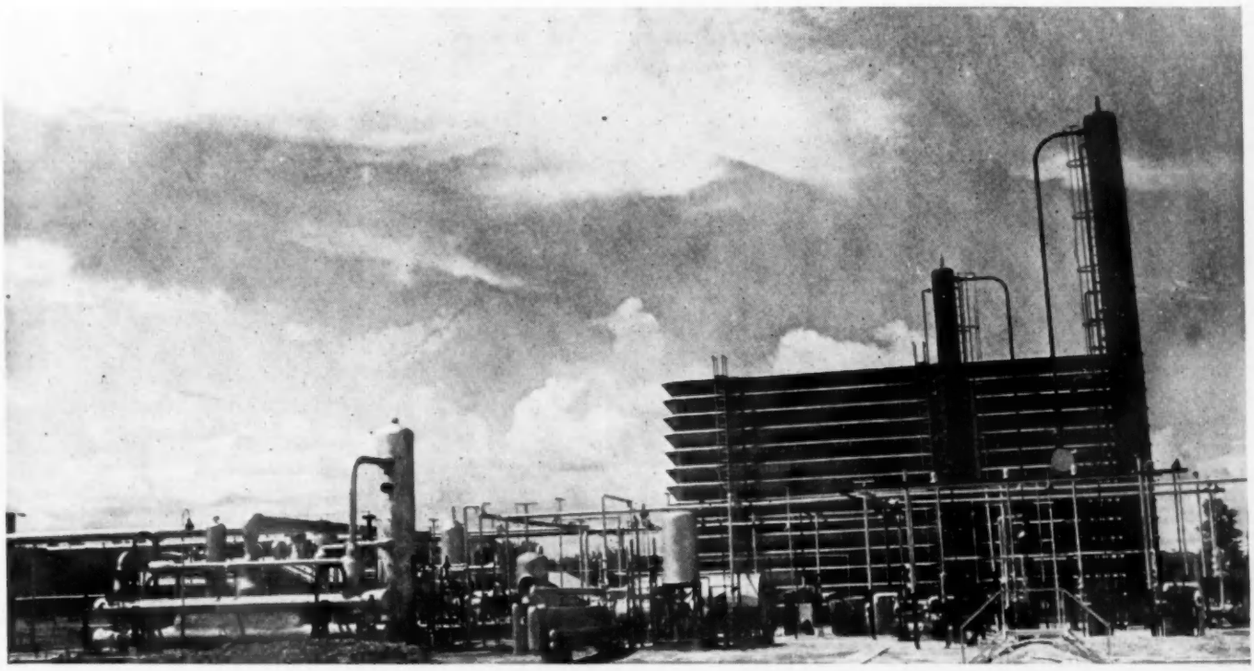


used for removing the remaining methane and ethane. However, these columns have been eliminated from use by improved methods of flashing and the columns are now being made available for butane manufacture. Refrigeration developed during the flashing operation is utilized for reducing the temperature of the liquid ammonia.

The oil used for countercurrent circulation with the gas is handled without extra equipment as part of the rerunning operations. Oil used is a low molecular weight product and an additional still is not required in its recovery. Oil used is a 42-gravity, 390° F. to 420° F., I. B. P. product, and normal countercurrent circulation is about .67 gallon per thousand. Use of the oil at low accumulator temperature is effective, since a corresponding recovery of high-octane hydrocarbons at higher operating temperatures would require a greater oil circulation. Absorption of all constituents is increased by the increase of the oil rate. Since more than 90 percent of the pentanes are absorbed or condensed, an increase in the oil rate does not increase the percentage of pentanes absorbed in proportion to the increase in percentage of methane and ethane absorbed. This effect is especially significant in handling lean gas, and when the circulation of oil passes the critical point selectivity of the absorption is virtually lost.

The raw gasoline is passed through a two-stage vent tank installation. It is not necessary to pass gas from these tanks through a tail absorber to recover desirable hydrocarbons released from the low-temperature flashing system.

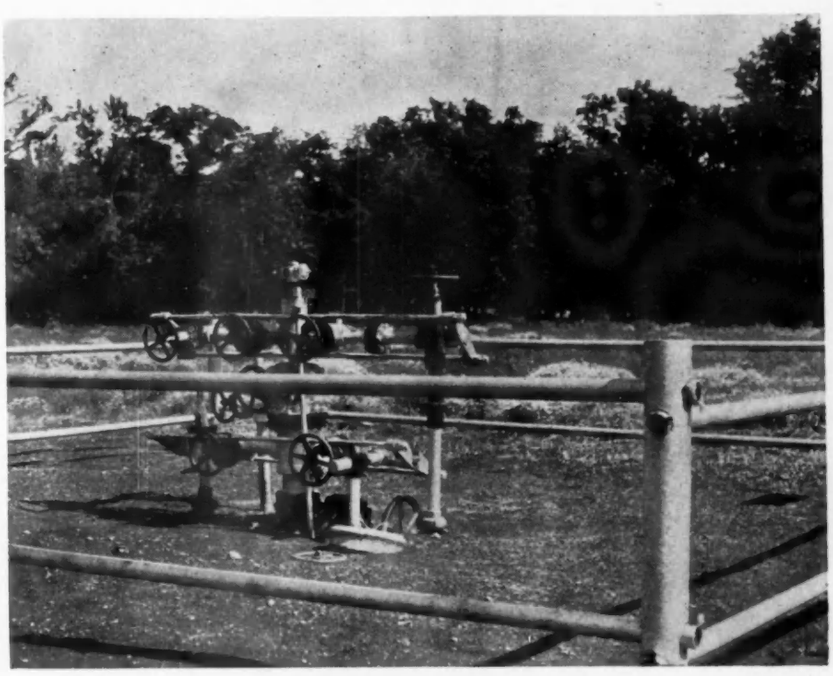
The process used at the Cayuga No. 2 plant is similar to that used at the other two plants. This plant was designed to handle up to 40 million feet daily. Gas comes to the plant at a pressure of 1400 pounds and passes through a water-to-gas cooler, gas-to-gas exchanger, and ammonia refrigerat-



Cayuga No. 1 Plant **This general view of the Cayuga No. 1 plant contrasts sharply with the first experimental plant built here two years ago. All three plants were largely the outgrowth of experiments conducted at this plant.**

ing unit. Temperature of the gas at this point is 5° F., but the temperature is further reduced to 0° F. by the Joule-Thompson effect accompanying the reduction in pressure to 1250 pounds with an expansion valve. Principal separation takes place at this temperature in the accumulator, as at the other plants.

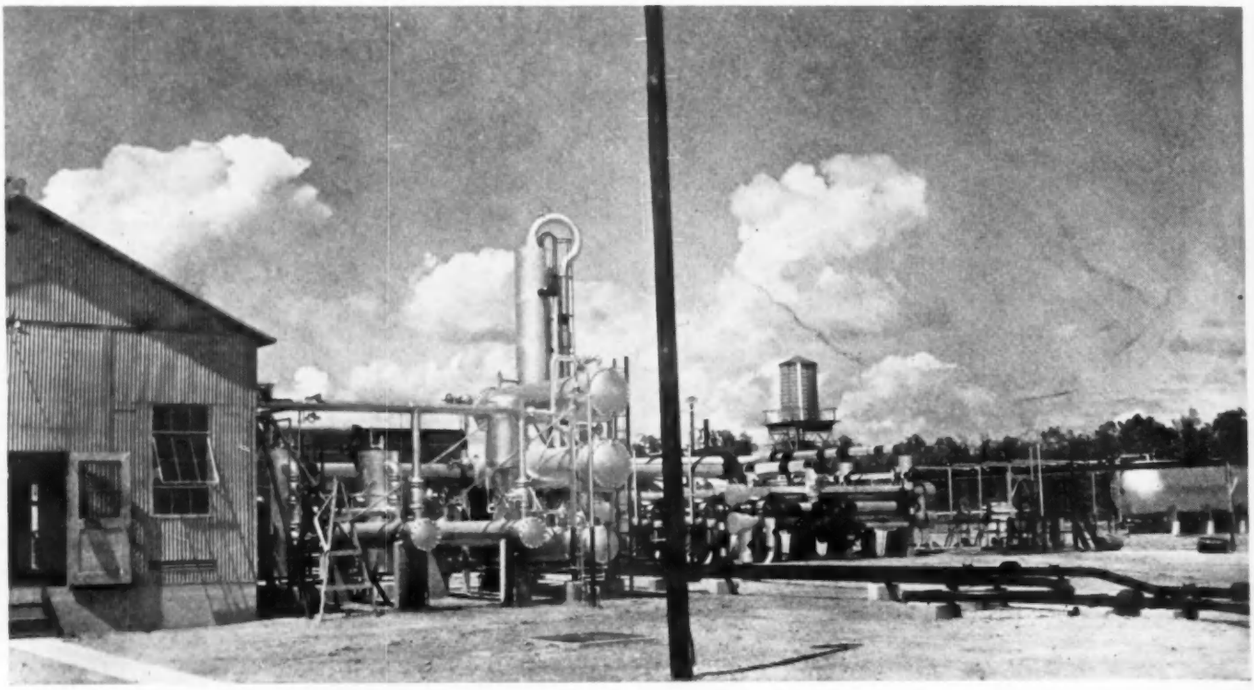
Fluid from the separator or accumulator is passed to the high-pressure flash tank operating at 250 pounds, and the temperature is reduced to —12° F. Liquid from the high-pressure flash tank contains an excess of methane and ethane for easy handling in a conventional stabilizer, due to inability to produce reflux at available cooling water temperature. A second flashing stage would normally give a loss of butane and heavier components, but such a loss has been reduced to a minimum by additional cooling of the liquid ahead of flashing. Use of the liquid withdrawn from the second flash tank for subcooling the liquid about to be flashed obviates the use of mechanical refrigeration. The exchange of heat between these two flows makes possible a second flashing operation at temperatures below —30° F. This second flashing operation is very effective and fairly sharp separation may be obtained.



A typical producing well in the Cayuga field

The liquid from the second flash tank retains a low temperature after passing through the inter-flash tank exchanger, and this low temperature is utilized for cooling the liquid ammonia stream going to the chillers. The ammonia is thus cooled to 10° F. About 5600 pounds of ammonia is used per hour in the chillers, and utilization of the low-temperature product from the second flash tank for cooling the ammonia represents a distinct saving.

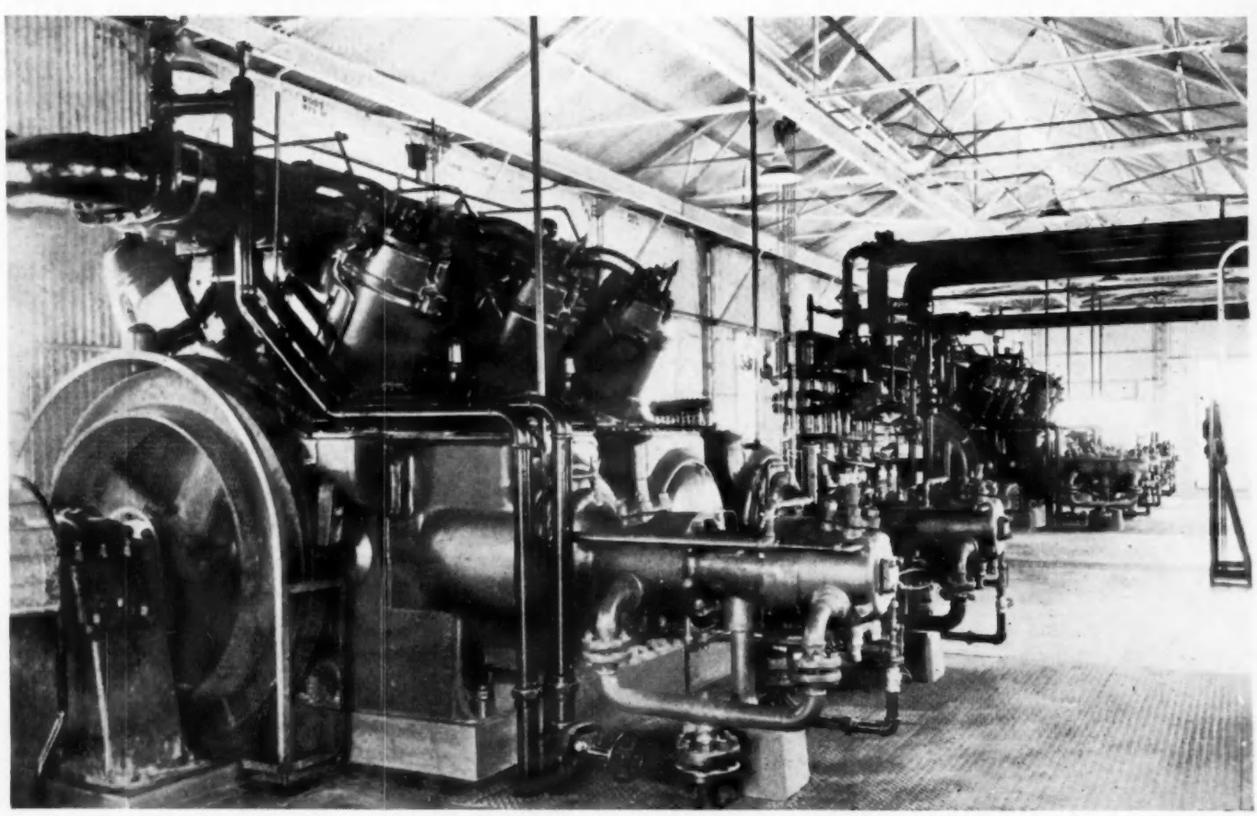
At the Cayuga No. 1 and Long Lake plants the low-pressure flashing sequence has been added and the liquid from the high-pressure flash tank is sent to a low-pressure flash under low temperature which gives sufficient separation of meth-



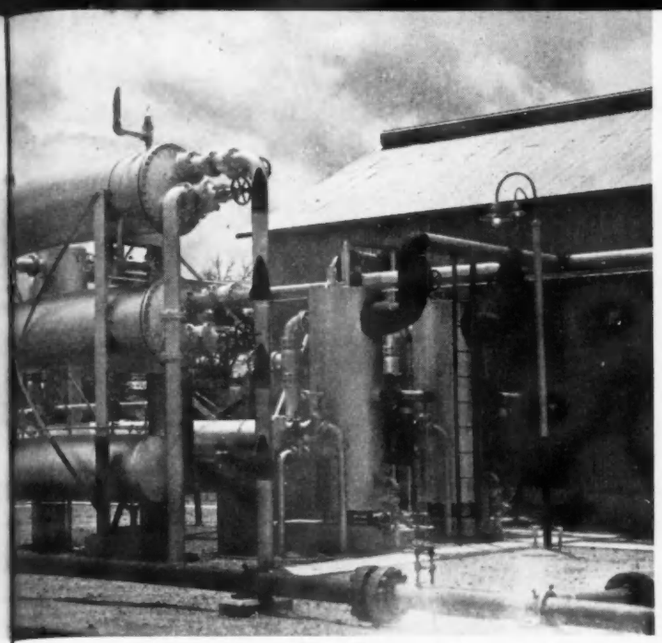
Cayuga No. 2 Plant **The compactness of the Cayuga No. 2 plant is shown by this general view. The ammonia unit is in the foreground. Other views on opposite page.**

ane and ethane to permit proper stabilization. The arrangement at these plants permits use of the liquid from a second flash tank for cooling ammonia destined for the chillers and releases the high-pressure fractionator column. The liquid ammonia is cooled by heat exchange with the liquid from the low-pressure flash tank. However, due to limited refrigeration facilities a part of the heat is removed from the NH_3 liquor with the interstage flash cooler coils.

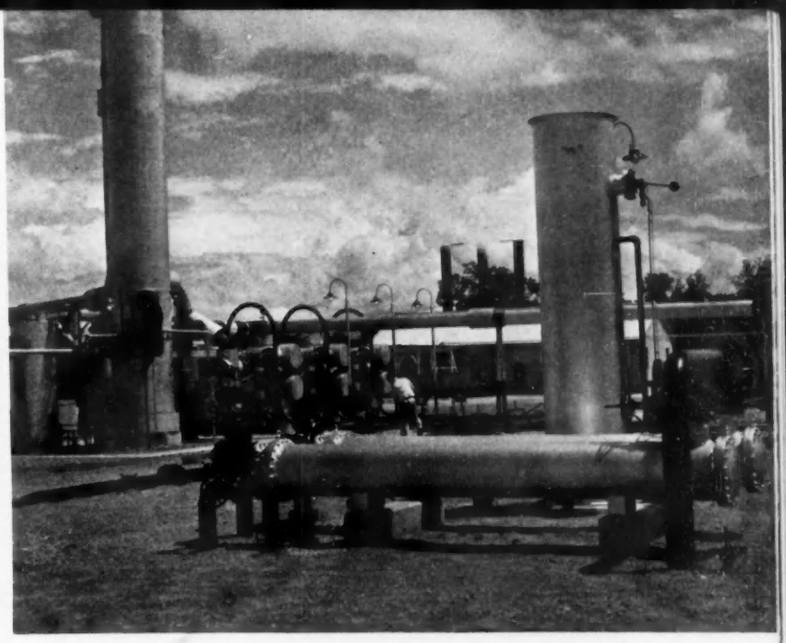
The subcooling system involves



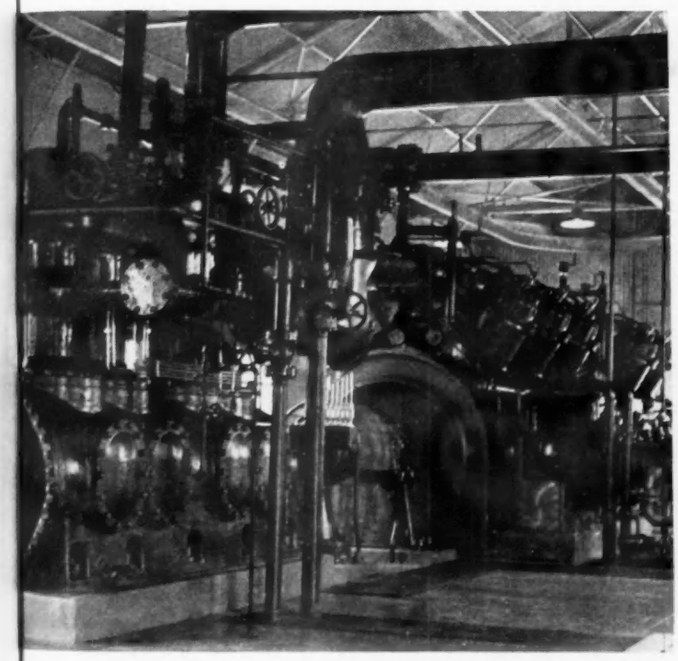
The flywheel side of one 300-horsepower and two 400-horsepower compressors used at Cayuga No. 2 plant are shown. One of the larger units is in the foreground.



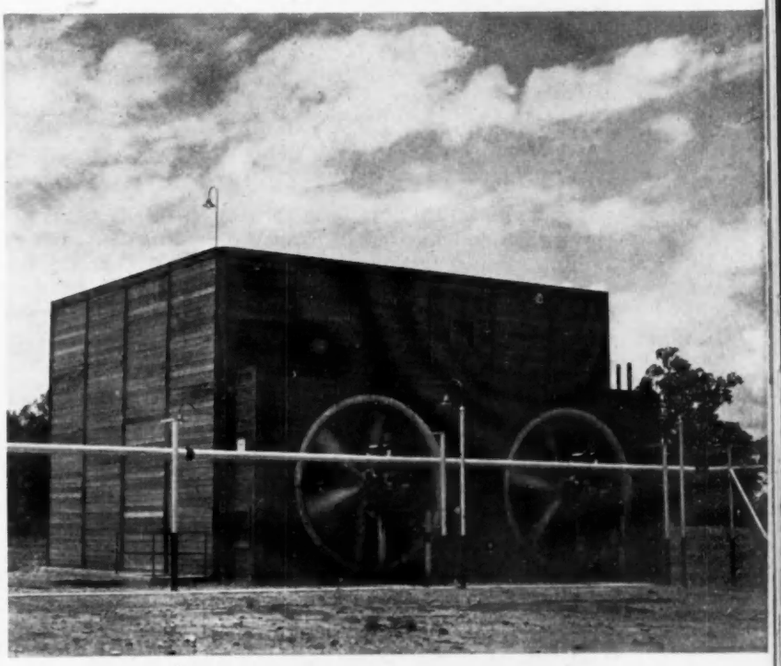
Ammonia flash tank and coolers



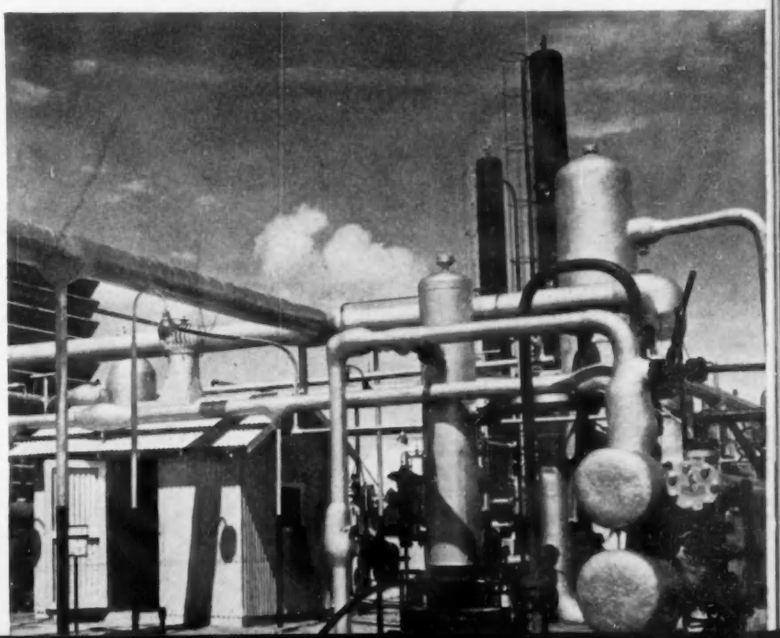
Jacket water coolers

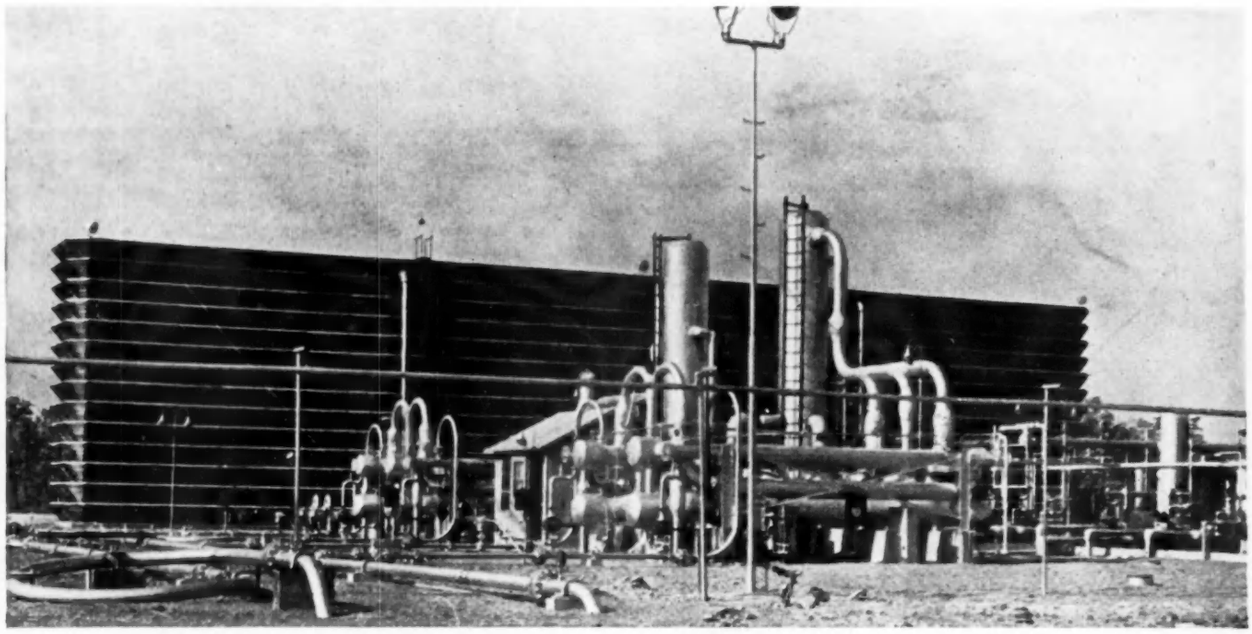


Above: One of two 185-horsepower ammonia compressors.
Below: Heat exchangers and chiller banks.



Above: Forced-draft cooling tower.
Below: Instrument house almost covered by equipment.

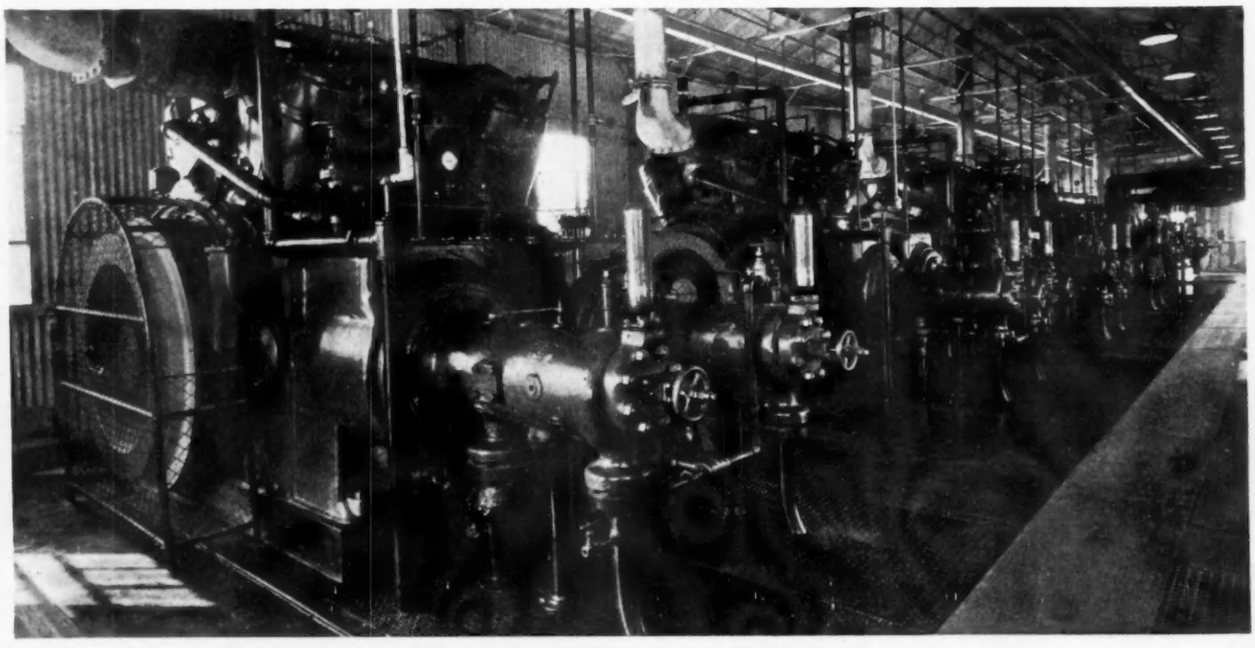




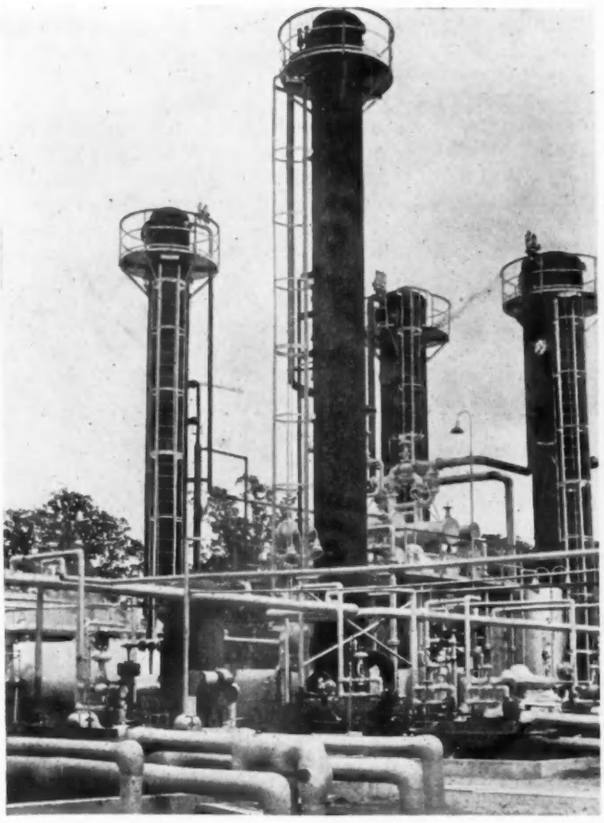
Long Lake Plant **was placed in operation early in 1940. It was designed to handle 60 million feet daily**

passing the liquid ammonia stream through a coil located in a tank of boiling liquid ammonia, the arrangement being similar to that used in most two-stage refrigeration systems. Pressure and temperature of the boiling ammonia in the tank are dependent on the interstage pressure, and ammonia evaporated in the tank is picked up only by the high-stage compressor. This subcooling method has the advantage over that of allowing the refrigerant to cool itself by its own evaporation, which vapor would necessarily have to be handled by both low- and high-stage compressors.

The refrigeration systems in the three plants are similar, except in the subcooling methods, as noted. Ammonia vapor is sent to the low-stage cylinder from the chiller, and after compression to 55 pounds the temperature is around 160° F. The vapor is passed through a water intercooler and cooled to 85° F. In the plant using the flash intercooler, the main ammonia vapor stream is passed across the upper part of the flash intercooler tank, joining ammonia evaporated from the flash intercooler. The two vapors pass to the high-stage suction for compression to 185 pounds. The vapor is then passed through water-cooled condensers for return to a liquid state at 92° F. The liquid is passed to a central container



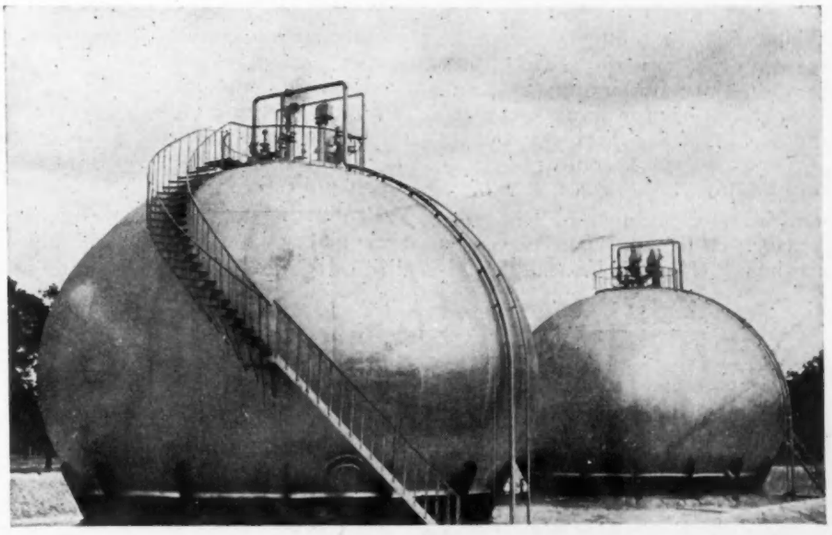
Four 400-horsepower and two 300-horsepower compressors are provided at the Long Lake plant. The compressor side of the larger units are shown.



At left is the stabilizing and rerun unit, where products from all three plants are finished.

This laboratory building at Long Lake, above, houses testing equipment comparable to that used in large refineries.

These storage tanks at the Long Lake plant add to the appearance of the recycling project.



acting as a receiver or surge tank. Subcooling of the ammonia leaving the surge tank is accomplished by heat exchange with cold condensate from the flash system, and in two plants by precooling by heat exchange in the flash intercooler, as described. Temperature of the liquid ammonia is about 10° F. as it enters the chiller valves, and is then reduced to —10° F. by final flashing at the chiller. Thus it can readily be seen that the precooling and heat exchange has resulted in reducing the two-stage flashing load from 92° F. to 10° F.

Tide Water Associated Oil Company and Seaboard Oil Company are seriously considering the manufacture of commercial butane in their plants, and probably will proceed with its manufacture in the immediate future.

Calcium chloride brine is used in all plants for hydrate control. The bottom of the primary accumulator serves as a reservoir for the solution, an improved arrangement over original installations. Brine flows from the base of the accumulator in two streams, one going to the suction of the three pumps and a second being controlled by an interphase liquid-level control on the level between the distillate and brine in the accumulator. The pumps discharge brine into the main incoming gas stream ahead of entry into the exchangers. The gas and brine flow together until separated in the accumulator. Brine released from the accumulator goes through a heat exchanger to a concentrator operating at atmospheric-plus pressure. The brine is maintained at a temperature of 190° F. during reconcentration by use of steam coils in the tank. Actual concentration is controlled by use of a submersed cylinder, fluctuations in the buoyancy of the cylinder operating an air-pilot assembly. This pilot controls a motor valve, the valve in turn regulating the rate at which stripping gas is released through a perforated spider in the bottom of the concentrator. Evaporation of excess water from the brine solution is largely controlled by the rate at which the stripping gas bubbled through the brine.

The stabilizing and rerunning units for handling products from

all plants is located at the Long Lake plant. The condensate has an initial boiling point within the natural-gasoline range and an end point above that of the motor-fuel range. Plant production is fractionated for removal of methane and ethane, stabilized and finished as a propane-free product. After stabilization, the product is either marketed or sent to the rerun still for such cuts as the market requires.

Highest operating pressures are maintained at the Long Lake plant. The compressors pick up the gas from the accumulator top at a pressure of 1500-1600 pounds and compress it to 2500 pounds for injection.

At the Cayuga No. 2 plant, suction pressure is about 1100 pounds at 38° F. and the discharge pressure 1650 pounds at 110° F., a low compression ratio.

Compressors at the Long Lake plant include 4 400-horsepower, 2-cycle, angle-type units, and 2 300-horsepower units of similar design. At the Cayuga No. 1 plant, 1 225-horsepower, 1 300-horsepower and 1 400-horsepower unit are used. At the Cayuga No. 2 plant, 2 600-horsepower compressors and 1 400-horsepower units are used. The larger compressors at the last-named plant each have 6 14-inch power cylinders and 2 4½-inch compressor cylinders.

At Cayuga No. 2 plant, 2 185-ton 17 x 12 x 12 ammonia compressor units are used, each being direct-connected to a 600-horsepower combination engine and gas compressor. Each ammonia compressor has 2 17-inch low-stage cylinders and 2 12-inch high-stage cylinders. At Cayuga No. 1 plant, a 400-horsepower angle-type combination gas and ammonia compressor is used for operating the refrigerating equipment. At the Long Lake plants, 2 300-horsepower angle-type compressors are used for handling the ammonia.

Steam is liberally used at all three plants. The steam plant includes 7 150-horsepower boilers at Long Lake, 3 boilers at Cayuga No. 2 plant, and 4 at Cayuga No. 1. Steam is delivered to pumps, turbines and process equipment at a pressure of 225 pounds. The 3 boilers used at Cayuga No. 2 plant are the largest of their kind ever built.

The field gathering system at Long Lake was designed for a working pressure of 2500 pounds, and well-head pressure is carried as nearly as possible on intake lines. Well-head pressure in the Long Lake field varies from 1900 to 2000 pounds, while in the Cayuga field the pressure ranges from 1400 to 1480 pounds. Gas is injected at Long Lake at pressures between 2300 and 2500 pounds, and at Cayuga the injection pressure varies from 1500 to 1650 pounds. Producing depth at Long Lake is about 5300 feet, at Cayuga about 4000 feet. Gas from individual producing and injection wells are metered with orifice meters. Injection is through casing and check valves are provided to prevent back-flow of gas from injection wells under any condition.

Producing and input wells are arranged to meet structural conditions. The Woodbine sand at Long Lake is irregular, and careful planning of wells was necessary to provide an efficient sweep of recycled gas.

A gravel-pack injection well recently was completed at Long Lake and results have been satisfactory in this project. The original 9 7/8-inch hole drilled in the producing zone below the casing shoe was underreamed to full 16 inches, screen was set through the sand, and then the enlarged hole below the casing shoe was gravel-packed with small gravel. The well was produced until cleaned, then converted into an input well.

A 16-car double track steel loading rack with 6 additional emergency spaces serves as loading facilities and is located on the I. & G. N. railroad one mile from the Long Lake plant, this plant being connected by 23 miles of pipe line to the two Cayuga plants.

The three Tide Water Associated Oil Company and Seaboard Oil Company partnership plants described above are licensed or will be licensed by the Distillate Engineering Process Company.

Anco Gas Corporation

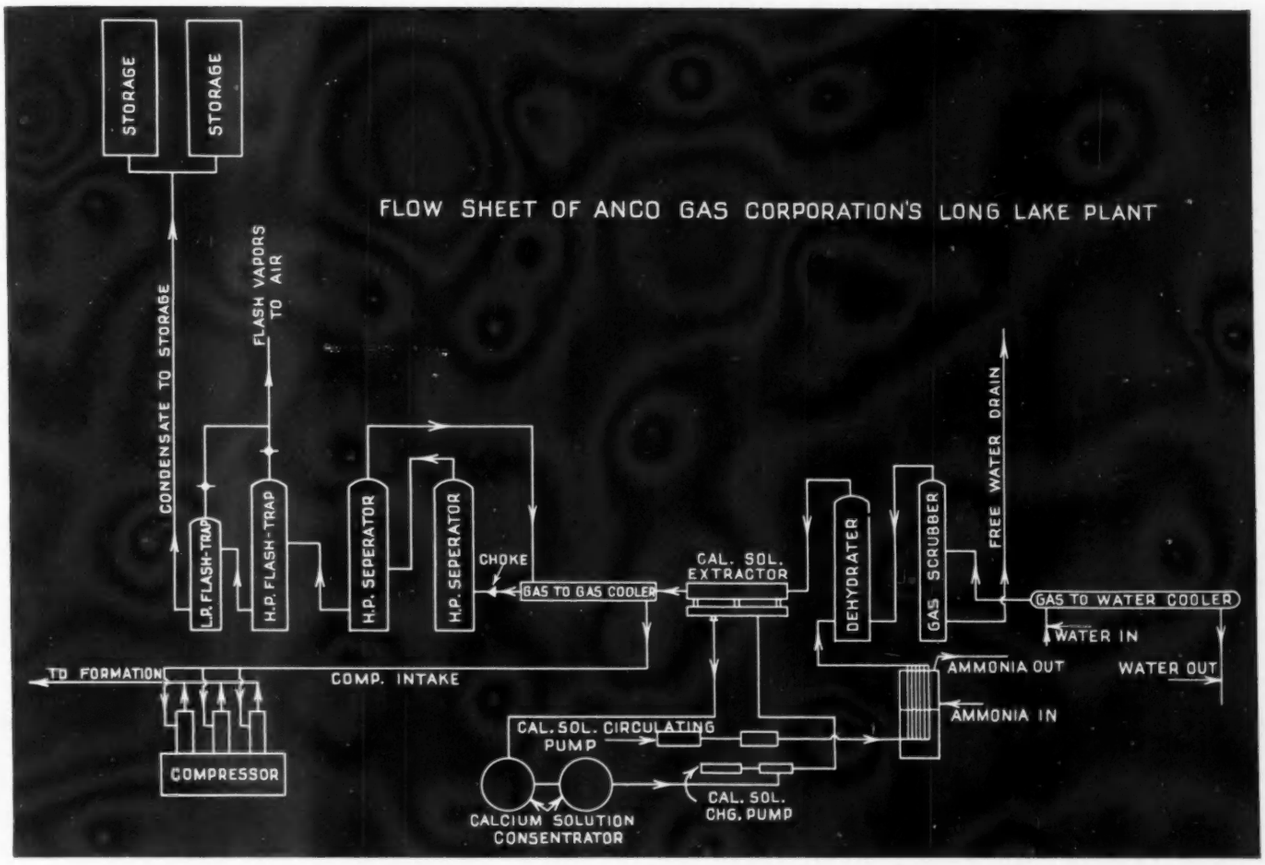
Anco Gas Corporation's recycling plant in the Long Lake field was one of its first type completed. The installation employs single-stage separation, with refrigeration and dehydration, and operation is based on the application of principles involving reduction of pressure and lowering of temperature of the flow stream. Prior to primary separation, temperature of the gas is lowered to a point that permits recovery of the most desirable condensate with a reasonable pressure loss.

Gas comes from 15 producing wells at a pressure of 2050 pounds and is immediately passed through water-to-gas heat exchangers, where it is cooled from 120° F. to 73° F. Free water is extracted by a scrubber. The gas then passes to the main dehydrating unit, where the temperature is further reduced to 48° by injection and circulation of calcium chloride in the gas stream. The flow is then through the gas-to-gas heat exchangers, where the temperature is further reduced to 34° F. The cooled gas passes through 4 separators, where pressure is reduced from 1850 to 1400 pounds. A choke is provided in the main line immediately ahead of the separators. This reduction in pressure is accompanied by a temperature drop to 16° F. The

The wellhead at input wells differs little in appearance from producing wells, this particular injection project being located on the M. H. Sullenberger lease.

Anco Gas Corporation

Long Lake Field, Texas, Recycling Plant



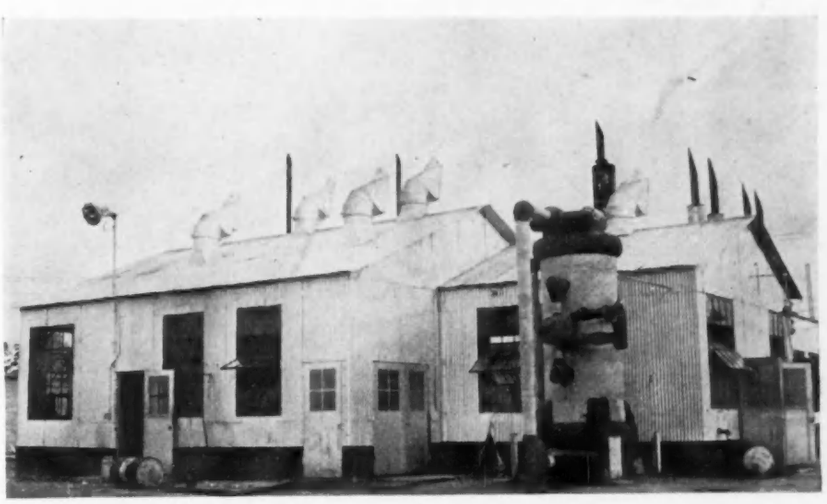
gas then passes through gas-to-gas heat exchangers to the compressors at a temperature of 42° to 45° F., and at a pressure of 1350 pounds. It goes to the input well at a pressure of about 2250 pounds.

The calcium chloride is injected into the gas stream to remove water vapors that would normally prevent necessarily low temperatures during separation. Ammonia is circulated as a cooling agent for the calcium chloride. The calcium chloride is injected at a temperature of 36° F., and is immediately extracted after passing through the dehydrating unit with the gas.

Condensate from the second high-pressure separator passes through a high-pressure flash trap and then through a low-pressure flash trap, some of the undesirable vapors being flashed to the air from both tanks.

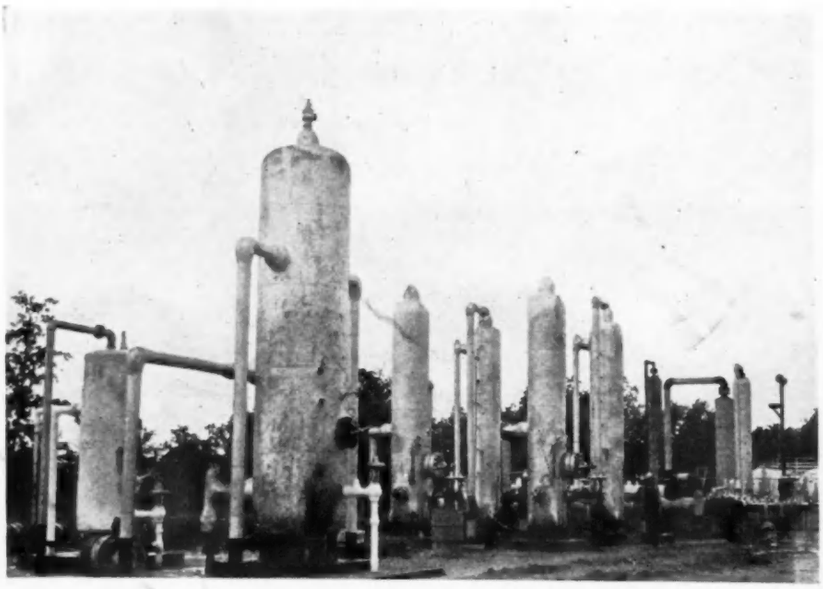
The distillate recovery has been around 9/10 gallon per thousand cubic feet, but recent reductions in operating temperatures are expect to improve the recovery.

Two angle-type compressors, one 600-horsepower and one 500-horsepower, are used for injecting the gas, the intake being 1350 pounds and the discharge 2250 pounds. These compressor units



The ammonia unit is shown in the foreground, with the ammonia compressor and auxiliary equipment buildings in the background.

The scrubber, right foreground (below), and dehydrating unit, center, prepare the incoming gas for entry into the separators. Calcium chloride enters the vertical dehydrating column at a point near bottom, as shown; the gas and calcium chloride, pass on together from the top of the column, and the calcium chloride is recovered immediately by the extractor, shown as two horizontal tubes in the center of the picture.

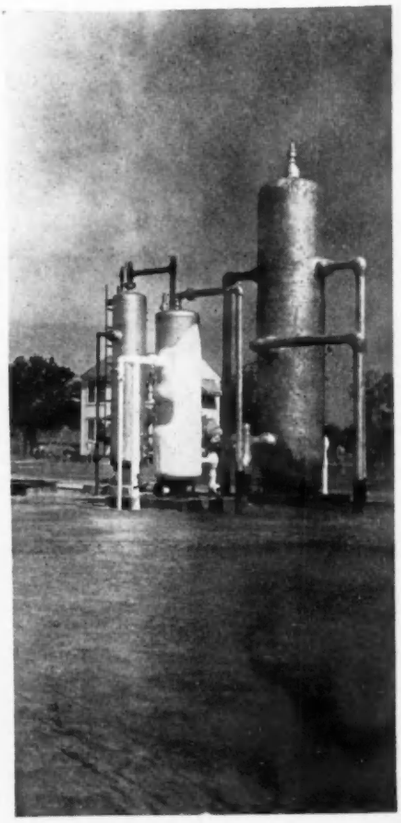


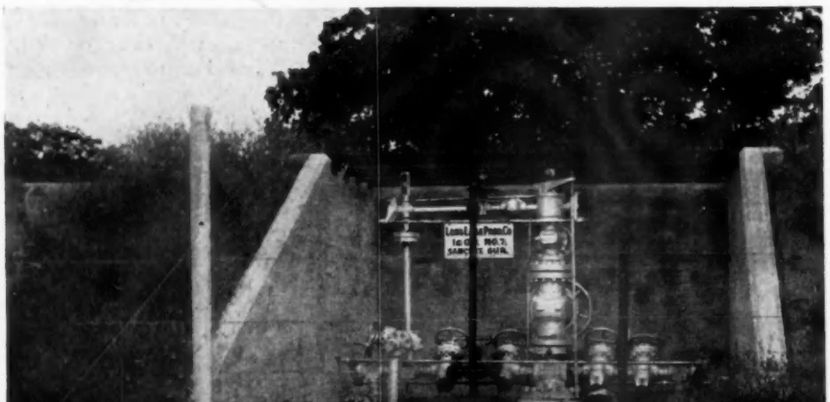
This general view of the separation unit shows the flash tanks in the foreground, separators in the center, and dehydrating and cooling units in the rear.

are handling above 35 million feet daily, yet only one injection well is used.

Calcium chloride is circulated at the rate of 300 g.p.m. with a 3 x 10 power pump driven by a 150-horsepower gas engine. Ammonia is circulated with a 150-horsepower gas engine. A 100-horsepower gas engine is used as an auxiliary unit and for circulating water.

Reduction in pressure of gas is accompanied by sharp temperature drops, as reflected by frost on exposed columns (below). Use of ammonia also gives extremely low temperatures.





This injection well is handling the entire output of dry gas from Anco Gas Corporation's Long Lake plant, the average input being about 35 million feet daily at 2250 pounds.

PILE IT ON, *you Pushers!*

DIESEL FUEL IN THE CENTRALIA FIELD! Two "Caterpillar" Diesel D13000 Engines powering a Wilson Mogul rotary and a Wilson-Snyder No. 14 pump for Paul Rossi of Houston, Texas. Operating 24 hours a day, these engines, together, use only 8 gallons of 8-cent fuel an hour!

NATURAL GAS IN THE CONROE FIELD! Two "Caterpillar" Diesel D13000 Engines, converted for natural gas, powering a Wilson Mogul drilling rig and a Wilson-Snyder No. 16 pump. Operating 24 hours a day. Owned by Strake Petroleum, Inc., Houston, Texas.

OUT THERE in the oil-fields, you haven't got time to "wet-nurse" machinery. *And here's machinery that doesn't need it!*

All a "Caterpillar" Diesel Engine asks is normal care, and it'll give you every benefit of its simple design, strength-tested steels, and heavy-duty, long-life construction—stand up 24 hours a day, 7 days a week, *to the toughest drilling jobs you've got!*

So pile it on, you Pushers! And if you've got natural gas handy—and it's cheaper than Diesel fuel—*you can use it!* Because the "Caterpillar" Diesel Engine sizes most popular for drilling can be easily converted in the field to burn gas.

And when you operate on Diesel fuel, you'll find you get full Diesel economy. For the exclusive fuel-system of these engines successfully uses such non-premium grades as No. 2 and No. 3 domestic furnace oils. *And very little of it per hour, at that!*

Dependability. Speed. Fuel-economy. To those three "Caterpillar" Diesel advantages, add these other three: Simplicity of operation. Ready portability. And the most complete and widely available parts-and-service facilities of any oil-field machinery in the world! See your nearest "Caterpillar" dealer, or write direct to the factory, for further information.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

INSIST ON "CATERPILLAR" DIESEL POWER IN THE ENGINE-DRIVEN EQUIPMENT YOU BUY

CATERPILLAR

REG. U.S. PAT. OFF.

DIESEL ENGINES and ELECTRIC SETS

TRACK-TYPE TRACTORS • ROAD MACHINERY

Exact Technique Developed For Shooting Illinois Wells

SHOOTING the comparatively shallow Benoist- and Aux Vases-sand wells in order to open new drainage channels has become a common practice in the Illinois Basin whenever their output declines to unecenomical levels, and exacting techniques have been developed.

The first step in the procedure is to move in a light string of cable tools, usually a portable drilling machine, equipped with facilities for pulling rods and tubing, drilling, operating a sand pump and swabbing. After lifting the pumping unit from its foundation and setting it aside, the hole is cleaned to bottom. In some cases, where the Benoist is separated from the Aux Vases by a thin streak of shale, the hole is deepened to include all of both producing formations in one well.

After all loose material has been bailed from the hole and the measurements and logs checked, a shot is lowered and set according to accepted shooting practices. After spotting the shot, a "parasol" bridge is placed immediately above the time bomb, then the hole is tamped. Two tamping methods are in common use in the area, one being the so-called "pea-gravel" tamp and the other involving the use of quick-setting gypsum cement.

Pea-Gravel Tamps

In the gravel method it is saturated with freshly produced crude oil, and care is taken to see that pebbles of sufficient size that might make subsequent cleaning out difficult are not used. The grains of gravel should correspond roughly to the size of sifted garden peas. The first two or three feet of the hole immediately above the parasol bridge is filled with crushed rock, of the size ordinarily employed by cement contractors doing heavy concrete foundation work.

After the crushed rock is lowered into the hole, a funnel, frequently made by using a 12x1-inch swedge, although some use a swedge with 1½-inch for the smaller pipe, is set above the open casing. A sloping trough for mixing the gravel with the oil is placed on the concrete pad at the well head with the lowest end above the funnel. A tank truck is driven near the well and a 2-inch line laid to transfer the oil to the mixing trough, so that the oil will flow slowly from the highest to the lowest end of the mixer. Two men are required to lower the gravel into the well, one shoveling the gravel from the stock pile to the top end of the trough, while the other slowly works the oil-soaked gravel into the funnel. The funnel is made with the small opening so that no large slugs of wet gravel will fall into the hole to bridge above the shot. The man who mixes the gravel with the oil maintains a consistency of the mix that more oil, in quantity, than gravel passes through the funnel. Thus, the oil tends to fill the pipe above the gravel level, so that a uniform tamp will be obtained.

The amount of the shot placed in the well varies according to the methods employed, but frequently a quart to the vertical foot thickness of the sand is set. The amount of tamp follows roughly to the number of quarts used. For example, if a 70-quart shot is required to break up the sand, a 70-foot gravel tamp is placed above the parasol bridge. The time bomb ordinarily is lowered above the glycerine shells and timed to explode in the early morning following completion of the gravel tamp. The work is scheduled so that all operations will be completed before darkness, so that no accidents can happen to either the men or tools.

Quick Setting Cement Tamps

Another method of tamping becoming popular consists of placing a tamp above the parasol bridge made up of a carefully controlled slurry of quick-setting gypsum cement that is mixed in a specially built truck. This truck contains all the equipment required for mixing the slurry and lowering it into the hole. The quantity of water to a

Gravel being shoveled into tilted mixing trough with crude oil flowing from tank through two-inch pipe to gravel tamp a Benoist well before shooting.

See the
New INTERNATIONAL
DIESEL TracTracTors
HERE'S THE BIGGEST crawler-power news of 1940—International's 4 New DIESEL TracTracTors. We offer the big TD-18, the small TD-6, and the in-between sizes—TD-9 and TD-14 . . . perfectly designed balanced equipment to operate balanced equipment at a profit. International Harvester has designed economy, performance, low upkeep, operator convenience, and long life into these powerful, versatile crawlers. Their handsome streamlined style shows what's on the surface. Under their hoods are International full Diesel engines, long famous for their quick, easy starting, outstanding economy, and lugging ability.
Every detail of TracTracTor design is perfectly coordinated with the power of the engine to turn out the most work per day at the lowest cost.
These New DIESEL TracTracTors have what it takes to make money for you. Ask the nearby International industrial power dealer or Company branch all about them.
INTERNATIONAL HARVESTER COMPANY
(INCORPORATED)
180 North Michigan Avenue Chicago, Illinois
Sold outside U.S.A. by International Harvester Affiliated Companies and Distributors.
Cable Address: Harvester, Chicago
INTERNATIONAL
DIESEL
INTERNATIONAL
INTERNATIONAL
Industrial Power

BEFORE DECIDING UPON UNIT PUMPERS FOR YOUR LEASE . . . .

Investigate the possibilities of NATIONAL Unit Pumpers

Standardizing upon unit pumpers is of extreme importance. Will the unit selected pump allowables every day without shutdowns and undue maintenance? Will it contribute toward keeping power bills to a minimum? Will it provide safety and convenience in operation? Will its salvage value be high? These are some of the important questions that must be taken into consideration.

National Unit Pumpers may be the means of lower ultimate lifting cost for you. Before final selection consult a National representative.

DOMESTIC
EXECUTIVE OFFICES
PITTSBURGH, PENNA.
•
GENERAL SALES OFFICE
TOLEDO, OHIO
•
DIVISION OFFICES
FT. WORTH, TEX. • TULSA, OKLA.
TORRANCE, CALIF.

THE NATIONAL

SELECT FROM THE

Complete

NATIONAL

UNIT PUMPER LINE

BRIEF SPECIFICATIONS

	TU20C-JD2TP	TU70C-JD7TP	TU140C-JD14TP	TU234C-JD23TP	*TU234-JD23TB	*TU304-ED30TB	*TU464-ED46TB	*TU464-E46TB
API Walking Beam Rating, lbs.	3100	4000	8200	9125	9125	12,750	15,100	15,100
Peak torque rating API inch lbs. at 20 spm	5400	17,900	36,800	57,200	57,200	76,500	113,000	124,000
Over-all gear ratio	26.0	24.9	24.9	29.8	29.8	29.6	30.8	10.2
Maximum polished rod stroke, inches	15	24	32	42	42	48	54	54

*Equipped with National Eccentric Disc Cranks and Counterweights—other sizes have beam type counterweights.

BRIEF SPECIFICATIONS

SINGLE REDUCTION TYPES / DOUBLE REDUCTION TYPES	T040-E40T / T040-E40DT	T040-E80T / T040-E80DT	T080-E80T / T080-E80DT	T080-E80T / T080-E80DT
API Walking Beam Rating	18,850	18,750	24,000	24,000
Single Reduction Type: Peak torque rating inch lbs. at 20 spm	170,000	238,000	238,000	303,000
Single Reduction Type: Over-all gear ratio	9.7	9.4	9.4	9.32
Double Reduction Type: Peak torque rating inch lbs. at 20 spm	139,000	200,000	200,000	
Double Reduction Type: Over-all gear ratio	28.8	28.3	28.3	
Maximum polished rod stroke, inches	84	64	72	72

All the above types are equipped with National Eccentric Disc Cranks and Counterweights.

L SUPPLY COMPANY ONAL

EXPORT

THE NATIONAL SUPPLY CORPORATION
30 ROCKEFELLER PLAZA
NEW YORK, N. Y. . . . U. S. A.

•

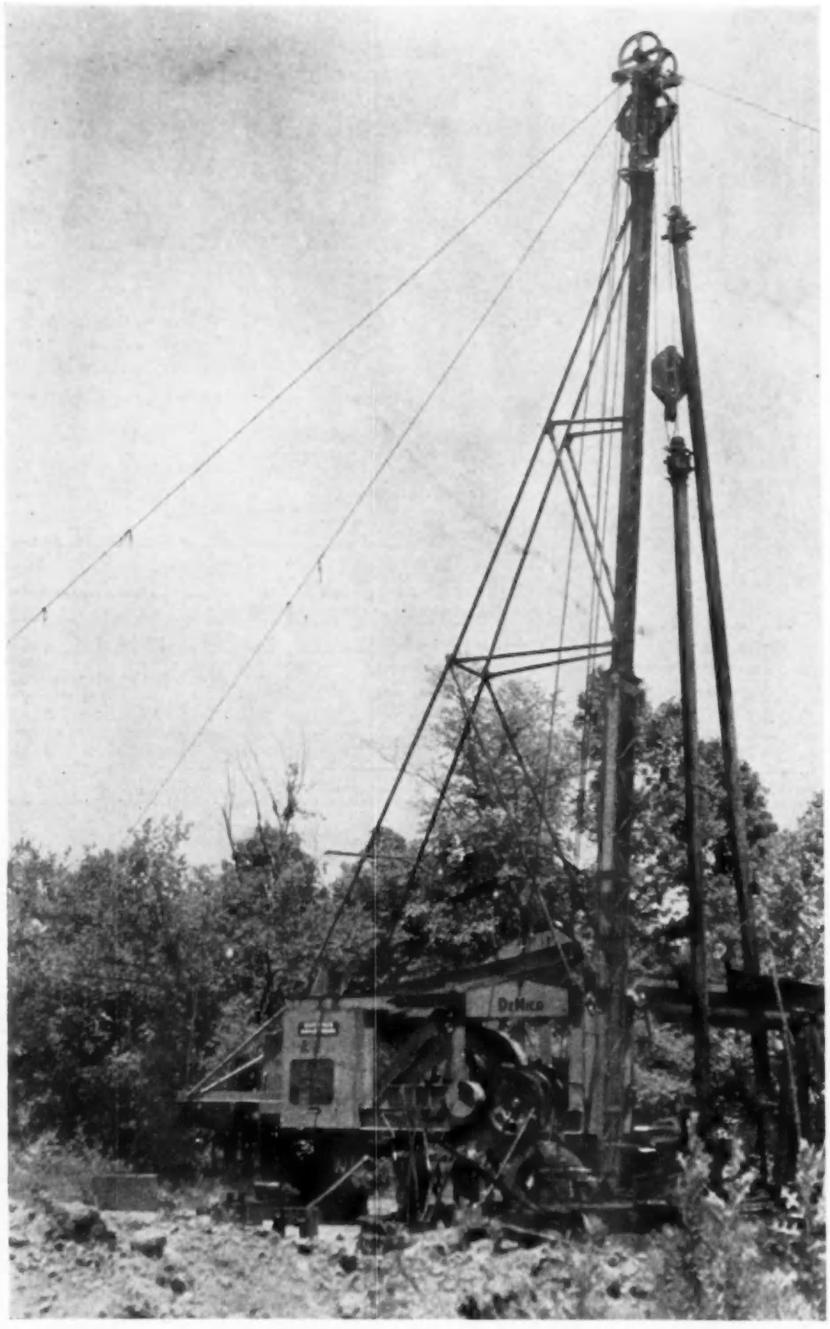
RIVER PLATE HOUSE
12 SO. PLACE, LONDON, E. C. 2
LIMITED LIABILITY

•

PLOESTI, ROUMANIA

•

MARACAIBO, VENEZUELA



A Bucyrus-Erie 29-W clean-out machine over well preparing for a shot which shows method of handling lubricators with sheave and wire lines.

given amount of cement has been determined so that consistent results can be forecast. As the mixture is prepared, a sectional bailer is lowered into the top of the casing, succeeding sections screwed to the first to form a long pipe with a controlled dump valve at the lower end. When the desired quantity of slurry has been placed in the bailer, it is lowered to the crushed rock cover on the parasol bridge and dumped as the bailer is lifted from bottom. By skillful manipulations of the bailer, a tamp of the slurry that contains no air pockets is set above the shot, and a tamp which will set uniformly.

If the shot has been set in the bottom of the hole at the proper location, the force is expended horizontally into the sand body without injury to the casing. In many of the wells, the oil string is set into the Benoist and cemented the full length with a circulated job. The gypsum-cement-tamped wells infrequently flow because of the shot force, but the gravel tamped jobs sometimes lift part of the tamp from the well. The top of the casing is left open in all cases.

Cleanout Methods

After the shot has been exploded, the clean-out crew removes the debris from the bottom of the well. Ordinarily the time required for pre-conditioning the well, cleaning out and replacing the tubing and rods is 7 days.

The cleanout tools in the field are usually self-contained, having a gasoline-gas-butane motor for power, and with built-in drilling line drums, hoisting line and sand reel. The method most frequently employed embodies a pair of lubricators, one for the drill stem and tools, and one for the sand pump or bailer. The top of the oil string is equipped with an ordinary plug valve casing head, or a master gate. In either case, a short nipple is connected to the upper opening with a quick-operated ground joint union screwed to the nipple. The other half of the union is made fast to the lubricator so that this tool can be broken down quickly. The lubricator is of the same size of the casing and is long enough to contain the string of tools or the bailer as the case may be. The top of each lubricator tool is equipped with an oil-saving device having rubbers and an adjustable clamp for a tight squeeze around the wire line passing into the tool.

When going into the hole with the tools, the lubricator and tools are lifted above the floor and the union made up tightly by sledging the ears of the union bonnet. The casinghead or master gate is then opened and the tools lowered through the casing to the bottom. When sufficient hole has been made in the pea-gravel or gypsum tamp, the tools are lifted by the drilling cable until they are within the lubricator, and the master gate closed. The union is disengaged afterwards so that the lubricator containing the tools may be set to one side. A similar operation is performed for the other lubricator to be fastened to the casing so that the sand pump or bailer can be let down to bottom. Each time the bailer is lifted it is raised above the master gate before dumping. A dump box is provided and placed at the usual place for directing the material from the bailer into the slush pit.

Public Relations

A GOOD listener is a joy to the average human, for it is given to most of us to listen by necessity, and when one at last has the opportunity to do the talking, a gracious listener is perfection itself. The urge to talk is fundamental in the human system. The right to do so is written into the constitution of the United States. But the securing of listeners is the speaker's problem.

Now comes the point to a great national and world wide enterprise, the gathering of listeners, otherwise advertising. On the air the process is of course, literally true, but in the printed word the object is the same; to claim the attention of the individual and influence his thought in a planned direction. Persons who by some clever device are able to attract tens of thousands of listeners reap rich rewards; and those who are able to influence these listeners collect handsome fees. It's no different than the traveling medicine show —a free entertainment, next a talk, then the sales—but not to all, some are too critical.

Being critical is a prerogative of free citizens of a democracy. To stifle criticism is dangerous, to complain of it is a confession of incapability, to fear it is servile, to welcome it is wisdom, and to be guided by it is prudence.

So the best sellers have been the best listeners, and it is by virtue of this qualification that your author now begs audience on a subject which is usually handled by those of distinguished name for attainment in the field of influencing people.

THE accompanying article was offered us as a contribution to the present urge to promote better public relations in the petroleum industry. The author prefers to remain anonymous in order to more effectively state the case, but we assure our readers that he is a responsible person, well known to the production groups, and has practiced the methods advocated herein with success.

It doesn't matter who he is, but a reader is entitled to know something about the source of the material offered for his consideration. Therefore it is pertinent to state that the author is some 40 years old, white, native born of native parents, reared under ordinary circumstances, public schooled, college graduated, and trained in engineering to a position of responsibility in crude petroleum exploitation, and is now a consultatnt after years of employment by various large organizations. He enjoys no eminence of position or wealth, is distinguished with no advance degrees, honors, or office, has no hobbies, or cultural attainments in learning, music or art. He associates with professional people, and comes in contact with all types of skilled and semi-skilled workers in both office and field. He often puts on work clothes and goes "on tour" with well crews and production shifts. He likes people and, as a result, people visit with him wherever contacts offer opportunity. People like to talk about their jobs, their circumstances, their experiences, and usually have some change to advocate in the direction of affairs, big or little depending upon the individual, and the author likes to listen.

People Think

People think. They think to the "left" and to the "right" and down the middle of the road, according to their ideas of that which is best for themselves. "Thinking people" are all the people of normal status from youth to the aged, regardless of educational qualification, race, creed, or condition in life. They think, justly and unjustly, logically and illogically, in learning or ignorance, but the result is the same ultimate difference of opinion, regardless that "all of the people some of the time" may be stampeded into unanimity.

This means that no matter to what lengths one may go to please people, there will be some who are indifferent, and others who are not pleased, and some who are displeased. Of these, the pleased ones are the safest to the cause, the next two groups are potential opponents, and the last group is dangerous.

Now as a listener, I, as merely one of a vast number of people, have occupied each category with respect to some topic. Of all the reactions the last, that of displeasure, is the most violent. One's own recollections will easily verify the ease with which one returns to complacent repose from moments of applause, to the absolute lack of stimulation when unaffected by what is seen, or heard, to the mild grunt of disapproval, and to the burning desire to "do something about it" when actually displeased.

It is the dissatisfied minority which teems with zeal, and we need only look about us to see what havoc can be wrought when the urge is sufficient. For the same reason one is quite likely to long remember injuries, and to forget all except the most exciting of pleasurable events. The task then is to keep on pleasing people, and to make amends for the oversights, errors, and downright misdeeds. In short—be human, and follow that old, old quaint but basic advice of him who has influenced people by the tens of millions for 1900 years, "do unto others as you would they should do unto you."

With this guidance you will need no expert to win the love of your employees, the loyalty of your dealers, and the trust of your customers. You may, indeed, need help to teach your own organization the golden rule, and to devise ways to insure its obedience. But having accomplished this the fruit of "public relations" will come as a just reward.

Friendship Is Goal

There can be no compromise with honesty of purpose, when you set out to win friends. True, one may gather followers by various devices —but friends only by friendship.

The goal of public relations is friendship—the basis of friendship is human kindness.

At this point comes an obstacle—competition. How can a business survive on "human kindness" in a world so full of devastating competition? I don't know. I only know that those who advocate "public relations" must be advocating a humanizing process, or else they are mere super salesmen who propose to prosper at the ultimate expense of their misguided client.

Ballyhoo Harmful

Public relations, says Fortune,[1] is not ballyhoo; it is not advertising, it is not press releases; it is not speeches about George Washington. These are secondary techniques, and they do no good—may even do harm—unless they are backed up with good deeds. *Basically, public relation is action!* Fortune went on to name outstanding persons in the field of public relations, and I your humble author, sought out one of these. He most considerately answered a letter requesting an appointment, he graciously accepted an invitation to luncheon, he most freely discussed the subject of "Public Relations in the Oil Industry." Encouraged by finding that my own ideas formed from mere observation as an employee and a consumer were identical with those of this distinguished specialist, I interviewed an official of a progressive independent oil company and advised him that in view of the present trend he should do something about public relations. He merely snorted in derision at the "too many experts." I tried to explain that he had the wrong idea, but to no avail. Two months later his company had a public relations department and now they are making progress. Vindicated a second time, I took an active interest in the A.P.I. program at Chicago in 1939.

Scales[2] said "Currently this humanizing process is characterized as the practice of public relations." This was again a confirmation of my convictions and I determined to set forth some very glaring misconceptions of means to favorably impress people.

A very common error is to suppose that the "ballyhoo" mentioned by Fortune is Public Relations. Consider the "House Organ." In one supposedly authoritative article on this subject with respect to the oil business appear the following statements, which are quoted not to antagonize the author of that article but to show the attitude which persists in the minds of so many.

(a) Starting a house organ is an easy matter.

(b) Material is subject to a slight measure of executive control.

(c) The trend is to bulk shipment with a self-help stack (for employees).

(d) An objective of "impressing every employee with the size of the company."

(e) Boosts for company products dropped in here and there.

(f) Dramatizing vacations.

(g) Principles and theories are sugar coated.

(h) To turn out a magazine of distinction takes far more effort.

(i) To achieve that flavor of secrecy is something of an art in itself.

(j) Every fact is checked with the result that the articles are held in high esteem by the readers.

In the list of statements extracted from the discussion on house organs note how lightly we the readers are treated. We are an "easy matter"; executives need not be concerned with that which is served to us, we get our public relations in bulk and help ourselves from a stack, we are supposed to be impressed with bigness, and to be fooled by boosts for products. We think we earn vacations, but they are to be "dramatized," and on return we get "sugar coated principles." A redeeming feature of the list is the admission that it takes far more effort to produce a distinctive magazine. Then there is a bad impression from that tribute to a flavor of secrecy as an art, and finally, some redemption in that high esteem is acknowledged for a factual publication.

One need be no expert to see that we had best be careful into whose hands he entrusts his house organ. We can recognize honesty of purpose, sincerity, and genuine human concern. These are far too sacred virtues to be dressed up in cheap tabloids to be obtained by "self-help from a stack."

Another error is the special booklet, issued impressively on good stationery, in dignified form, and passed out with some ceremony, with the object of delivering some particular message, but within the cover allowing statements to appear to convey one meaning when the most simple analysis by an elementary thinker will disclose enough fundamental dishonesty to cause a violently unfavorable reaction. One common statement is that "In this Company there are unlimited possibilities for advancement for everyone." Nothing could be more misleading. Because there is one Director who was once a pipe liner when the oil industry was making kerosene and burning the residue cuts above and below that product, is no proof whatever of the general statement. If an actuary were to evaluate the mathematical possibility of the average employee's chance of advancement, what would the answer be? The writer lectured the employees under his direction in a far different, and honest manner. The specialization of the organization was noted, the tendency to employ extra-skilled and super-trained engineers was pointed out, the necessity for continued routine work was evaluated, and altogether it was seen that possibilities were distinctly limited. True, every native born male citizen of the United States has a chance to be President, every buyer of a sweepstakes ticket has a chance to win the grand prize—but how much of a chance?

Another statement is made to impress employees with security of their jobs. This security can be expressed in figures, but I once saw a highly respected company authorize the following: "During the past six years when my friends and neighbors suffered from adversity, with jobs swept away over night, with employers closing down or effecting drastic and frantic curtailment, I have never once had the fear of my own employer failing me." Granted that he felt secure, he implies that all the employees were equally secure. They were not. He was a man on the management staff with 18 years of service. He did not see the droves of men in the field office coming in to obtain notice of termination of service with a cash allowance for severance. He ruined the effort of his company to make a favorable impression.

We frequently hear of the marvelous advances made by employees. The idea is to indicate that any one may do likewise. In eagerness to build up this case important contributing factors are minimized or ignored—but the subject to be influenced is not fooled. In this respect one company advises its employees: "You have a job with a Company where there is a chance for advancement." This is honest. They advise "while not everyone can reach the top . . . ," thus giving a warning of

HANGIN' ON REAL CLOSE

is the great Scotch specialty, as you've heard. But you ought to see how close this specialized *Conoco Coglube* gear-shield hangs on to exposed gears, wire rope, threads of stored pipe, and the like. Comes hellish high water, dirt and terrific drag—but still this *Conoco Coglube* stays right in there close, putting in its best licks against depreciation . . . putting the *shield* in gear-shield. Talk about pinching pennies . . . put in your trial order for this *Conoco Coglube* and you'll be cinching dollars! Continental Oil Company

CONOCO COGLUBE

AND THE OTHER CONOCO SPECIALIZED OIL-FIELD LUBRICANTS ARE IN STOCK AT POINTS LISTED

CALIFORNIA
Los Angeles
COLORADO
Craig
Denver
Ft. Collins
Ft. Morgan
Pueblo
ILLINOIS
Effingham
Grayville
Mattoon
Olney
Salem

INDIANA
Evansville
Princeton
Vincennes
IOWA
Chariton
Clarinda
Creston
KANSAS
Arkansas City
Chanute
Eldorado
Ellsworth
Great Bend
Herington
Hutchinson
Independence
Lyons
Marion
McPherson
Newton
Oxford
Russell
Wichita
Winfield
LOUISIANA
Crowley
Lafayette
Lake Charles

MISSOURI
Bethany
Kansas City
Maryville
St. Joseph
St. Louis
Trenton
MONTANA
Billings
Cut Bank
Great Falls
Lewistown
Shelby
Winnett
NEBRASKA
Falls City
N. MEXICO
Artesia
Farmington
Gallup
Hobbs
OKLAHOMA
Ada
Altus
Ardmore
Bartlesville
Chickasha
Duncan
Edmond
Elk City
Enid
Guthrie
Muskogee
Oklahoma City
Okmulgee
Ponca City
Seminole
Tulsa
TEXAS
Alice
Amarillo
Beaumont
Big Spring
Borger
Breckenridge
Brownwood
Corpus Christi
Corsicana
Dallas
Electra
Fort Worth
Gainesville
Galveston
Henrietta
Holliday
Houston
Longview
Marshall
McCamey
Mexia
Midland
Mineral Wells
Nocona
Odessa
Olney
Pampa
San Antonio
Seagraves
Tyler
Wichita Falls
UTAH
Salt Lake City
WYOMING
Casper
Glenrock
Greybull
Lovell
Lusk
Medicine Bow
Rawlins
Thermopolis
Worland

probability which is a healthy adherence to the truth.

The truth is not merely a statement which is in itself true. It may take a logician to explain the errors of some statements, but the everyday man who reads them needs no such analysis. He forms an impression. It may be exactly the opposite from the intended reaction.

In California in the fall of 1939 there was a most unfortunate display of ill will, hostility, disorganization, internal strife and general bad order in the petroleum industry as involved in a referendum over an act to put the industry under state control. The effort to influence people was an example of about all the things one could think of not to do. Although one cannot hope to conduct an entire industry in such manner that it will be beloved by the people, certainly the recent exhibition should be an incentive to progressive corporations to individually resolve to begin at once on a good will program. The people of California decided that notwithstanding "great economic wastes," lack of oil for the Navy, higher cost of crude oil production, approval of the Interior Department, and of the War Department, the signature of the Governor, and the support of the President, that the proposed oil control was not desirable. This verdict may be full of meaning, but only one thing is certain—the law was not wanted. Public relations begin at home. Just as a family reflects the character of the heads, so do employees of a corporation reflect their management. Scales[4] again says: "(The practice of public relations) . . . , demands first a sincere desire for satisfactory public relations." That there must be a "sincere desire" is a mild way of stating that those who are responsible must be honest with themselves and with their associates about wishing to conduct the business on a good will basis.

Seek Loyalty

Executives expect certain attributes in their subordinates. These are commonly obedience, submission to direction, and loyalty. Instead of this some receive only obedience and servility, and because there is apparently no revolt it is imagined that all is serene. The executive should realize that by reason of his position his staff may be deferential, he may mistake absence of treachery for loyalty, he may believe that service is efficiency, and he may interpret lack of complaint as a confirmation of perfect conditions.

As an employee I was critical. Trained to be critical of technical operations, I became even more interested in personnel relations and watched with keen interest the actions of fellow employees of greater and lesser rank. Privileged to know the highest officers, and well acquainted with the management, and being a staff man, the workings of executive technique were familiar. In my daily work the good listener practice made me the "confessor" of many a wage earner and junior salaried employee. I naturally became an unofficial mediator. My subordinates were confident that no private conversation would ever incriminate them, and many a grievance was corrected quietly and to the benefit of not only the complainant but to all others who might be subject to the same betterment.

I taught my subordinates all I could. I trained them in efficiency. I helped solve their problems. I criticized their engineering reports and returned them for correction, and when they were as nearly perfect as could be the engineer signed his own report. I never signed another man's work, except to approve it. The full import and ramifications of each assignment were completely explained. No instructions were ever peremptorily issued. Criticism of my own administration was privately and openly invited. Ideas were made welcome, but definite reasons were asked for so-called suggestions. Recommendations, thoroughly substantiated were preferred.

The result was success for everyone concerned. The men developed qualities hitherto unsuspected. Information poured into headquarters. Field cooperation became the rule. Interest was keen. Efficiency was almost automatic and loyalty was all that it should be. Promotions came and raises in salary were awarded men who had been at a level for years. The loyalty principle works both ways. I had to be loyal to my men. On one occasion one of my employees was reported for some imagined unwarranted interference with routine operations. I was asked to reprimand him. Investigation reversed the findings and instead of the reprimand the employee received commendation, and a misunderstanding was cleared up which opened the way to further progress. My men trusted me as their agent in management circles and this responsibility was much more of a concern to me than any thought of my own position. I knew that to them I represented "the company," and finally when circumstances made it desirable to broaden my experience in private practice, my greatest regret was the thought of leaving my associates, as I termed my group of employees, to again shift for themselves in a general attitude which single handed I could influence but not change completely.

Clean Hands

It is fitting here to quote a most successful engineer who also found that human relations could be more important than mere engineering. Says H. H. Anderson:[5]

"A small business as well as a large corporation or a whole industry is gauged by the public largely from the attitudes, actions, and utterances of its personnel; for they are the organization in the public eye. The first job of public relations then, is to give attention to our own house and correct disturbing conditions. We must go to the public with clean hands if we hope to gain or retain its good will. Then we must present the facts to show the public that our personnel has given it essential services, unselfishly conceived and faithfully rendered. * * *

"At the outset we must recognize that the tongue of good report among employees is one of industry's finest assets. The petroleum industry has nearly three-quarter million employees, counting those of dealers, each of whom is either an active or a potential ambassador of good will. How quickly our public relations will improve if employers will act to improve the effectiveness of employees in building public good will! * * *

"The public are looking more and more in the inner workings of business and industry. And the time has passed when they are willing to form their opinions on price and product alone. The logical persons to interpret these things to the public are the persons who are *in* business—the *employees.* Primarily through them the public gain confidence in the business as well as its products." Only satisfied loyal employees can be effective ambassadors.

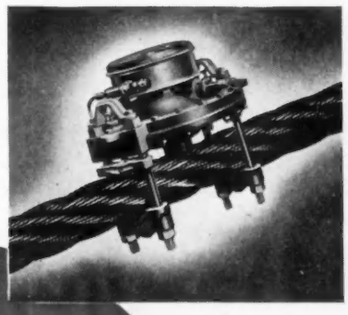
"In one recent survey of employee attitude, top-ranking desires of employees were: due credit for all work; interesting work; opportunity to learn; understanding and appreciation; and personal counsel. We must recognize also that employees have a natural desire to participate constructively in the activities of

OVERLOADING

Costly because of Early Destruction

UNDERLOADING

Costly because of High Purchase Price



The use of a tension meter will tell you your rope story. When loads are known it is easy to select the most economical sized rope.

The first requisite of Wire Rope is sufficient strength to do a job with ample factor of safety. To go above this definite strength requirement is to unnecessarily increase the cost of a rope without materially adding to its life. To go below the proper strength rating, you lower the rope purchase cost but shorten rope life by overloading. Both are wasteful. Only by the selection of rope of proper strength can you reduce initial cost to a minimum and enjoy maximum length of service...true economy. We will gladly tell you how to determine the proper strength of rope in your use. Write us today.

WICKWIRE ROPE

WICKWIRE SPENCER STEEL COMPANY

General Offices: 500 Fifth Avenue, New York City; Sales Offices and Warehouses: Worcester, New York, Chicago, Buffalo, San Francisco, Los Angeles, Tulsa, Chattanooga, Houston, Abilene, Texas, Seattle. Export Sales Department: New York City

their company, and there must be constructive guidance of such a fundamental instinct. Failure of an employer to heed these important desires will nullify his program, regardless of the merit of its other features. His other attitude toward them, more than almost anything else, will promote good will or create grievances."

Anderson clearly shows that the first necessity for desirable public relations is an organization of satisfied, loyal employees. Such an achievement may be the despair of executives, and many will quote experiences by the dozen tending to show that most beneficent treatment has resulted in final futility. True as this may be, and disappointing as the prospects may seem, makes it none the less fundamental that before a company can have public good will it must have the satisfied, loyal employee.

How to Begin

How to begin? It is not as complicated as it sounds. The executive first takes stock of himself. He decides that he wants to achieve as nearly as possible the ideal in public relations, and knows that he is first of all the responsible person who must set the example and see to it that his associates follow. This means that he must win over all of his board of directors—each one. He can have no internal strife, and therefore he must be prepared to deal with those who may scoff or prove to be non-cooperative. Some changes may be necessary. It takes courage to start out on a good will mission.

Having made sure of his board, the managers are next. If the new policy is radical there may have to be radical reforms. But the managers must agree to the purpose and strive to equip themselves to carry out the task of imparting an agreeable personality to their subordinates. This will call for a revision of character in some cases, because managers have arrived in their positions after years of service and may have qualified on the basis of attributes which are far removed from the new program. There's only one answer to this problem. They will have to qualify again. After all a manager's ability lies in his successful coping with situations. Fortunately managers have long been schooled in carrying out a policy directed for them and there may be little difficulty in obtaining the genuine cooperation which is the essence of the plan.

Each manager, as he joins the movement, will find that the job of inspiring good will in his subordinates proceeds directly from his own personality. Being an executive he must necessarily enlist the help of his division heads, and as the effort spreads out "down the line" the spirit of the undertaking of good, will require the fire of zeal from some source. Fortunately the energy of a competent executive is multiplied by a geometrical series, provided that the consecutive terms which are the various heads of groups, each perform as they should. For example, suppose that a manager deals with only three subordinates, and each of these with three others for only three successive steps. The total is $1 + 3 + 9 + 27 = 40$. This is how rapidly influence spreads. If one subordinate fails to cause his share of the progression the loss to the total number involved is progressively greater as the top executive is approached. Except for the unusual case, persons who are employed strive to please their superiors. If they know that they will please by being the personification of valued human qualities these qualities will tend to permeate the organization.

Some will say that organizations of today are too large for the permeating executive personality. This is an excuse for failures of some sort. If an organization can function technically it can function with respect to ideal public relations. One difficulty is evasion of responsibility, another is lack of the appreciation of the power factor. It may seem hopeless to survey a vast organization and contemplate the necessity for inspiring the entire organization—but what else is an executive for? That is his job—to make the organization perform.

Executive Influence

He can hire someone to manufacture the product, sell the goods, collect the bills, and pay the taxes, but he cannot hire anyone to exercise his personal human contacts. Some executives who deem themselves progressive may decide to engage the professional services of a Public Relations man. This is all well and good provided the executive and his staff actually participate. But if the new employee who is to "direct" public relations is merely set up with an office, a printing press, and a radio contract you have nothing but another advertising agent. Notwithstanding a published statement and a widespread belief that the printed word must bring the personality of the company to the employee and the trade, this idea is fatal to the genuine spirit of the goal of public relations.

Speaking as a former employee, for employees, we are distinctly not satisfied with printed words as a substitute for personality. We are intelligent. No matter how humble, we read, we visit, we observe, and we judge. We lead very plain lives. On and off duty we are principally concerned with unexciting and trivial details. We contact "the company" through one or more foremen, engineers, or perhaps superintendents. The result is a human outlook. We are concerned about our job first, we go home and are concerned with our family, we take an interest in local personal activities; a club, a lodge, a society, a school board, a road district, or yes, to be sure, a union of our craft. All these develop personality. Upon our return to work the "printed word" will simply not have a warm response.

Personal Interest

One time I had occasion to consult a friend who was a vice president in "my company." As happens to so many employees the time approached when progress seemed slow, other opportunities arise, and in a spirit of merely wishing to learn whether the outlook seemed good, bad, or indifferent I asked his advice. He replied that he was too busy with company affairs to worry about personnel.

This was not a shock—it was a confirmation of an attitude which was all too plain throughout his organization. Then and there a decision was made, and I left him to his great affairs convinced that this thing called public relations which begins with making employees the "ambassadors of good will" is the salvation of business, especially "big" business.

In private practice I have had increased opportunity to observe results of the good will policy in action. A temporary executive in miscellaneous organizations, occupying a position one might think could be embarrassing I find, on the contrary, that seeking help, help comes; seeking initiative, ideas come forward; seeking friendship, friends arise. Humans crave a personal interest.

NEW

ONE-WAY BREATHER

HEAVY FLY WHEELS

VAPOR COOLING

ROLLER BEARING CRANKSHAFT

FULLY ENCLOSED

GAS OR GASOLINE OPERATION

HOT SPARK MAGNETO

SPLASH LUBRICATION

FAIRBANKS-MORSE

MODEL Z PUMPING ENGINE

DESIGNED EXCLUSIVELY FOR OIL WELL PUMPING

NEW PERFORMANCE
NEW ECONOMY

A new "Z" Engine bristling with innovations . . . destined to break all records for low upkeep and trouble-free service.

Vapor Cooling keeps cylinder temperatures constant . . . Extra-heavy flywheels smooth out cyclical power demands . . . One way breather positively seals the crankcase from dust and dirt . . . Rigid crankshaft mounted on tapered roller bearings permits greater range of speed . . . Combination mixing valve permits switching fuels, gas or gasoline, while in operation . . . Completely sealed hot spark magneto free from dust and moisture.

There are thousands of dependable service hours built into the new "Z" Engine. Let this new "Z" give you new freedom from pumping engine worries.

THE CONTINENTAL SUPPLY CO.

General Offices: DALLAS, TEXAS

Foreign Sales Subsidiary

CONTINENTAL EMSCO COMPANY, Inc.

30 Rockefeller Plaza New York City, N. Y.

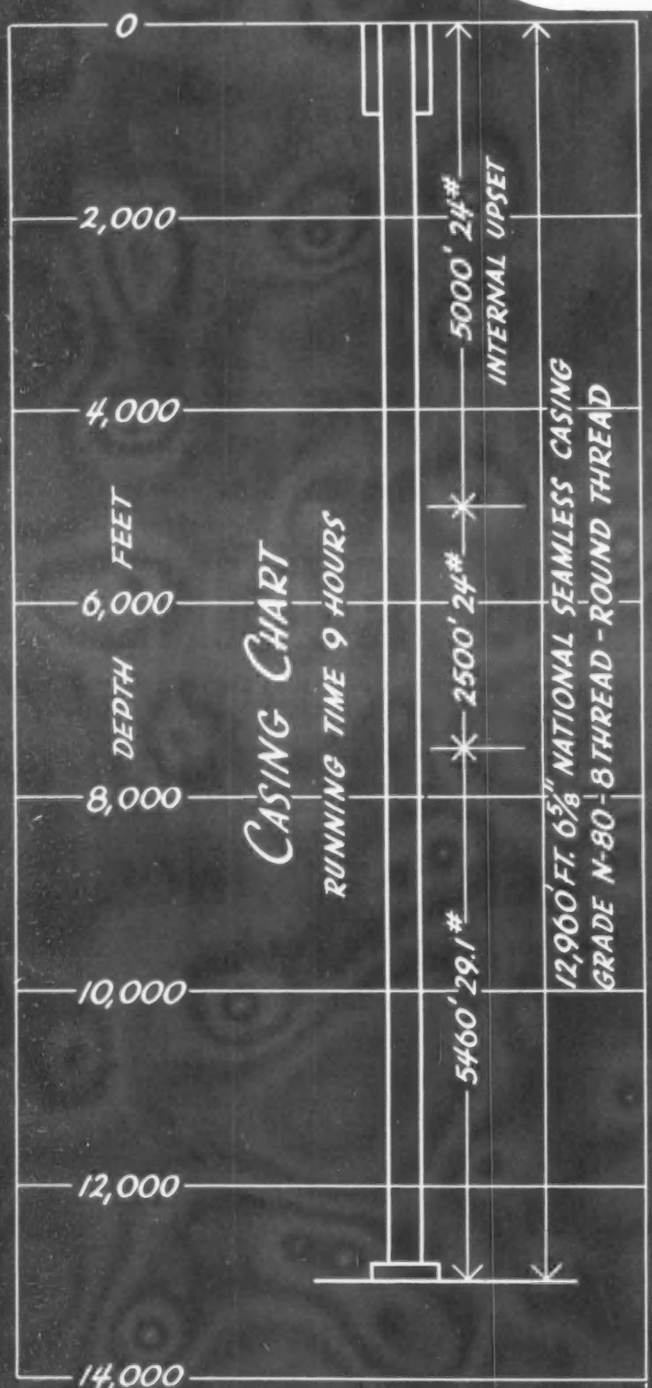
Representatives:

LONDON MARACAIBO TRINIDAD BUENOS AIRES

Continental

SERVING THE OIL AND GAS INDUSTRIES

12,960-ft.



CASING CHART FOR K. C. L. A5-8 Wasco Field, Calif.

GOOD MEN AND GOOD MATERIALS

combined to make this well a record-breaker. It was not so much a case of maintaining breakneck speed in all operations as careful planning for maximum efficiency. From erection of the derrick to final cementing, the entire operation progressed according to schedule, without delay. To safely speed the casing job, NATIONAL Seamless was used—because it stabs easily, screws together smoothly, and assures tight, trouble-free joints. Its uniformly high wall strength protects against terrific subterranean pressures.

NATIONAL SEAMLESS means pierced from solid billets of the finest quality steel. Only sound, flawless steel can be used for piercing, since no existing defects can be covered up in this process. At every stage in production, thorough inspections and tests give you double assurance that each length of NATIONAL Seamless will display the same uniform wall strength, dimensional accuracy, and uniformity in all physical properties.

...t. Well CASED IN 9 HOURS!

Oil operator uses National Seamless Casing in record-breaking California well

RECORDS fell like ten-pins during the recent drilling and casing of Continental Oil Company's K.C.L. A5-8, in the Wasco, California, field. In just 50 days of actual drilling, the hole was bottomed at 12,960 feet! And then, to cap this record, the entire hole was cased with a string of NATIONAL Seamless Casing in the almost unbelievable time of 9 hours!

Wherever you find new records being set for speedy and trouble-free well completion, you're practically certain of finding NATIONAL Seamless figuring prominently in the job. Oil men have come to know, from long experience, that they can count on NATIONAL Seamless for that extra protection that often spells the difference between "getting by" and real success.

In NATIONAL Seamless there is no weld—no long line of potential weakness to threaten successful completion of the job. Every length of this pipe is a perfectly formed cylinder, pierced from a billet of highest-quality steel, with uniform wall strength throughout.

In today's deep wells, why experiment with anything but the finest tubular goods the industry can produce? Standardize on the drill pipe, casing, and tubing which successful oil men say have proved best — NATIONAL Seamless — "Walls Without Welds." Write today for data on these famous products.

THESE OUTSTANDING DEVELOPMENTS PIONEERED BY NATIONAL TUBE

Seamless Drill Pipe
Seamless Upset Tubing
Seamless Long Threads and Couplings
Seamless Grade "D" Casing (now J-55), also Grade "D" Drill Pipe and Tubing*
Seamless Upset Casing
Seamless with Rounded Form of Thread
Seamless with Electro-Galvanized Coupling Threads
Seamless Normalized Tubing for Corrosive Conditions
Seamless Cement Lined Casing and Tubing

To be sure of getting the newest, most up-to-date improvements in Drill Pipe, Casing, and Tubing, always specify NATIONAL Seamless. NATIONAL's policy is to bring you finer, stronger tubular goods, and bring them to you First!

*NATIONAL Seamless Casing is available in sizes up to 28" O.D., the only seamless casing larger than 16" O.D.

NATIONAL TUBE COMPANY

PITTSBURGH, PA.

United States Steel Export Company, New York

UNITED STATES STEEL

They are as if starved, especially on company jobs where work confines them to a minimum of personal contact.

I knew another vice president, now retired from a large corporation. He was standing on a ferry boat and had a large can of fish bait, which he dropped. It fell on the toe of a passenger. The great, tall, handsome vice-president bent over the injured passenger, and affectionately grasped him lest he fall. Then in a voice of genuine concern the vice president said exactly the right thing: "My good man, I know that hurt terribly and I'm awfully sorry." The man looked up at that benign and friendly face so filled with kindness and—smiled. It was "O. K."

Then again, on the contrary, as an employee, we in headquarters, had news that an electrician had been killed while servicing equipment. I encountered the general superintendent shortly afterward. He was sitting at his desk, 25 minutes away from the scene. I was surprised. I would have left at once to look into such a fatality. "Too bad about the accident," he said. "Tomorrow I'll have to go out and have an investigation—that's company rules." Printed rules, a dead man, and an investigation; that's the order, and I couldn't helpt placing the cause of that accident on lack of personal contact.

That reminds me that the safety program is often associated with the personnel department. Each of these could use more of the recommendations of Anderson.

Safety men travel about the field of operations and note details. They organize meetings. They attempt to train foremen, and they investigate accidents— all very punctiliously. One result of this methodical routine is to become so perfunctory in personal contact that the very actions of those who take pride in their relations with fellow employees become affected. No supervisor should become so blind as to imagine that much that seems friendly and agreeable is merely a return of a patronizing policy or is practiced on the part of the subordinate as the proper attitude to assume.

Organized, periodic, obligatory, safety meetings of small groups under a foreman's guidance may become a bore to all concerned. Inspiration is the keynote of leadership. Consequently whoever is to conduct even a routine meeting should prepare for it as he would any job to be well done. It takes no fine talent to be merely a "boss," no technique to give orders backed with all the authority of management, nor does it require responsibility to merely do the assigned thing.

Men notice these things. No one is quicker to estimate a man's capabilities than those under him. Yet these are not the ones who may have any voice in correcting the lack of qualities which are so often sorely missing in their immediate superior. The effect comes in failure to cooperate. The failure may be automatic or deliberate, and in the latter case may be most cleverly disguised.

The writer one time listened to a speech by a veteran safety director of the Santa Fe Railroad. He spent his entire effort on taking foremen to task for evasion of responsibility, that is for failure to feel personally liable for the welfare of their men. He was advocating what is now the first essential of public relations—a personal, humane concern for the employee.

Personnel departments with included safety divisions, and with experts in control, become so accustomed to handling the confidential personal data on employees by means of the latest business machines that it is perhaps natural to deal with the employee himself in the same manner. All too frequently the only attention of the management to personnel relations is through an organized agency.

Example of Kindly Spirit

The writer as an employee was once delegated to serve the personnel department in a campaign to secure endorsement of a new annuity plan. The first step was to be trained in the subject, the next was to be schooled in how to present the proposition. The entire program of preparing us for leadership was conducted in a most enlightened manner. The final touch was a speech by a company officer on what the management was really trying to do for the employee. That speech was an inspiration. One could feel that here was a man who knew that he could not talk to all the employees but really felt individual responsibility for each and every one. He finished by stating, in answer to a question as to how the company expected to guarantee fulfillment of its voluntary obligation to provide Annuities, that never in his 28 years of company service had it ever been even suggested that his company did not fulfill its obligations, written or verbal, as specified and beyond, that he was authorized to commit the company, that he did so and furthermore that he pledged his own integrity as one of the management. He radiated confidence, he personified honesty.

Upon facing the employees, I was asked the same question in an open meeting, and thereupon related the incident of the gray haired, sincere, human executive who had so inspired me. Opposition ceased, to this day after nearly ten years, former employee associates recall that meeting and remark on the effective dramatization of the aged officer's declaration of honesty of purpose, and personal promise of performance as stipulated.

Of 983 contacted employees in my group, each one subscribed to the plan, notwithstanding occasional open skepticism, criticism, objections, hard times, and general resistance to a new arrangement whereby the employee contributed to the fund. Let it here be stated that the fact that the plan was obviously urged by the management had a tremendous effect upon a well disciplined personnel. Granting that this feature won over 90 per cent of them, the others were surely influenced by that noble executive whose inspiration was multiplied a hundred fold and then carried to these and other thousands of employees.

This was a vivid example of the powerful influence of a kindly spirit. He was powerful because he was sincere. Public relations will be likewise powerful with equal sincerity. Sincerity demands action, and this in turn requires authority. Hence public relations begin at the top, where the executive will find the task one worthy of his hire. He will also find that as he devotes more time to action in the broad realm of public relations as suited to his problem, he will have to give less attention to the actual management of his operations. The opportunity is a challenge. The reward is great. Let us begin at once.

References

[1] "Fortune," March, 1938, p. 57.

[2] Victor H. Scales, Pattern for Public Relations, A.P.I., Chicago, 1939 in Proceedings, Sec. 1, p. 29.

[4] Victor H. Scales op. cit. p. 30.

[5] Petroleum's Good Will Ambassadors, H. H. Anderson, Shell Oil Co., St. Louis, Missouri. At Chicago Meeting A.P.I., Nov. 1939. THE OIL WEEKLY, Dec. 11, 1939.

62 B.C.—The Pons Fabricus at Rome built in 62 B.C. First bridge whose arches do not appear as semi-circular.

1933 A.D.—One of the greatest suspension bridges in the world is the Golden Gate Bridge which spans San Francisco Bay. Its overall length, including approaches, is 9,217 feet. Feature is the graceful central span of 4,200 feet supported by two massive towers each 746 feet high.

Continuous Improvement

IS OUR WATCHWORD, TOO

Gray's Systems of Well Control were pioneered and developed to provide complete control during the entire sequence of operations from drilling, through production inclusive. Gray's policy of continuous improvement has meant continuously better, more flexible, systems of well control. But this policy does **not** result in obsolescence of previously manufactured assemblies. Rather, refinements can be added at small cost to any Gray assembly thus making for long-range economy.

From the beginning Gray products have been made from the finest materials procurable and engineered according to the most advanced principles of construction. Not only are they designed to serve adequately the needs of today, but also they have built in them the unseen ability properly to service the needs of tomorrow.

"Continuous Improvement" sums up the story of Gray progress.

GRAY
TOOL COMPANY

H O U S T O N

***West Coast Distributors:* WAGNER-MOREHOUSE, INC., Los Angeles**

DRILLING CONTRACTORS' NOTEBOOK

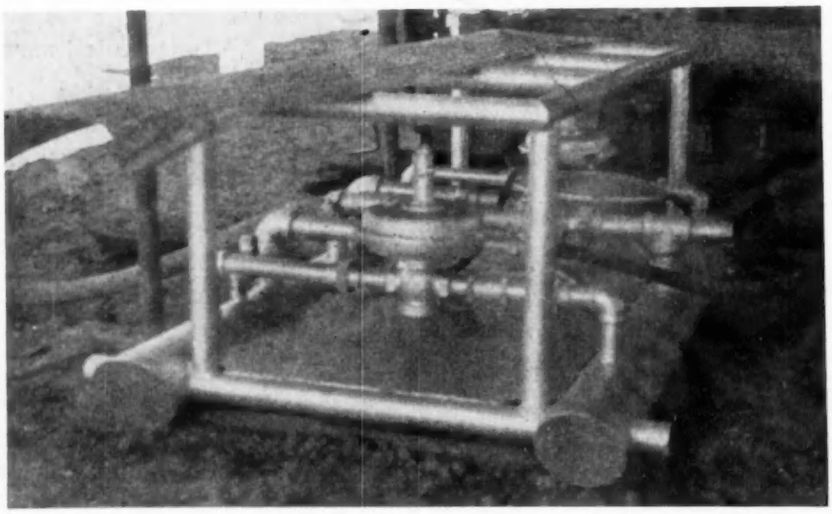
Helpful Suggestions For Those Interested In Drilling Methods

Operating Ideas Maintenance Hints New Rig Hook-ups

Published as a regular feature of THE OIL WEEKLY

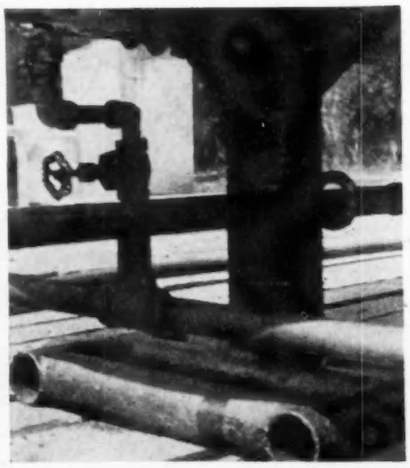
1. RIGGING UP

Fuel Regulators Mounted on Skid Base Permit Use of Side Members as Manifolds



Side members of this skid base for fuel regulators serve as manifolds to save space.

TO minimize connections in rigging up, fuel regulators may be mounted on a skid base with side members of the base used as manifolds. The side members may be tied together with braces and a flat sheet of tank steel tacked between them for a floor. Risers with a flat-roof frame welded to cross members at each end may be covered with corrugated iron for protection against inclement weather.



This smoke box jack is made of an all-thread nipple and a cast steel collar.

2. RIGGING UP

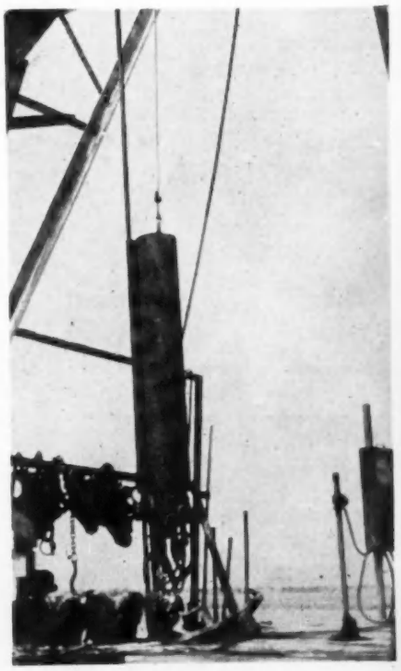
Collar and Nipple Make Boiler Jack

A STURDY, adjustable smoke box jack may be made of an all-thread nipple welded inside a heavy cast steel 10-inch collar, and engaging threads inside another such collar. Two more similar collars and a rest arched to seat the bottom of the smoke box make up the supporting column, which is welded to a 3-foot square footing of 4-inch pipe. The threads in the upper collar are kept well greased, so that adjustments in height may be easily made with chain tongs around the collar. An eye welded to one of the fixed collars supports the blow-down line.

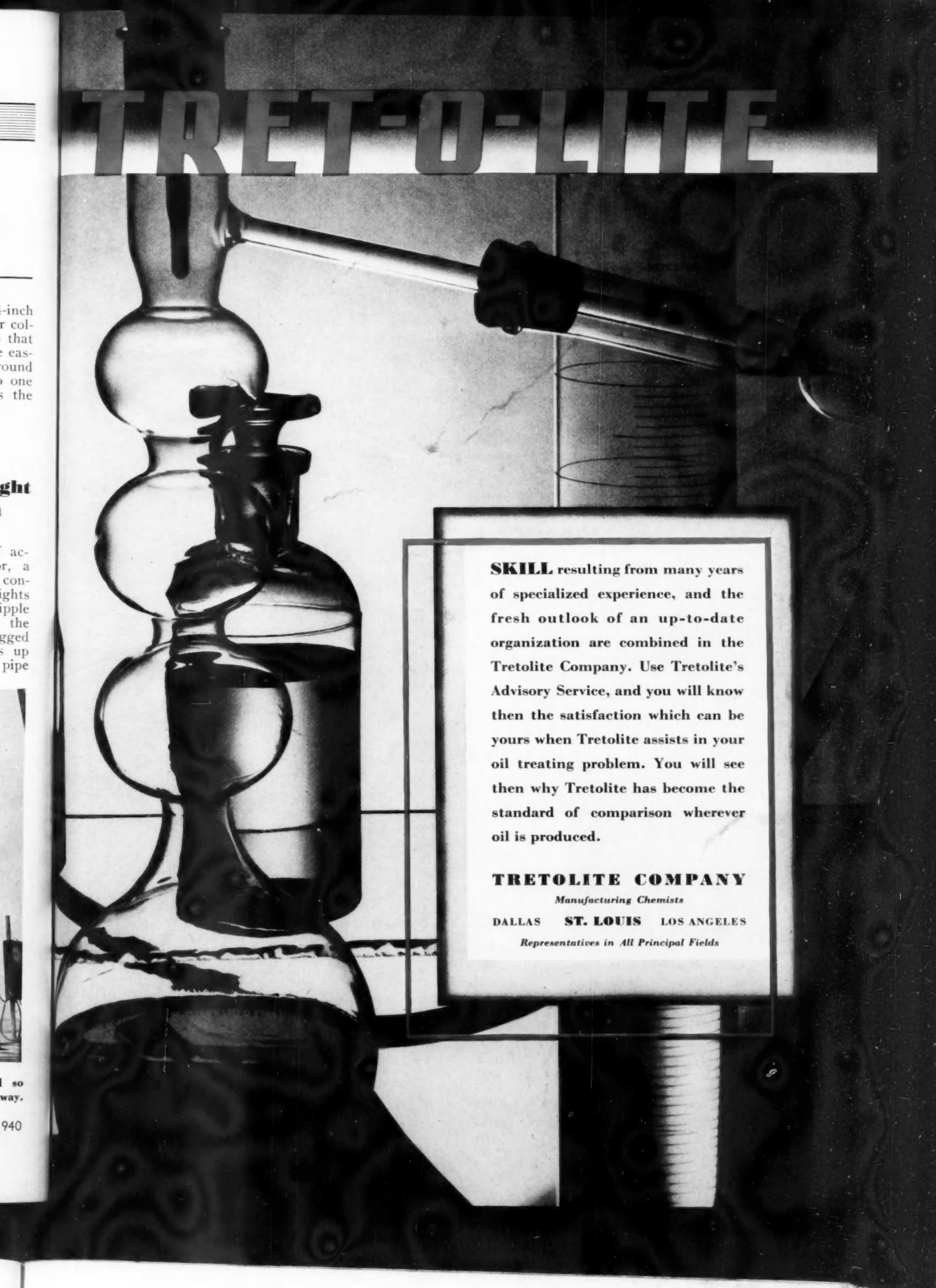
3. SAFETY

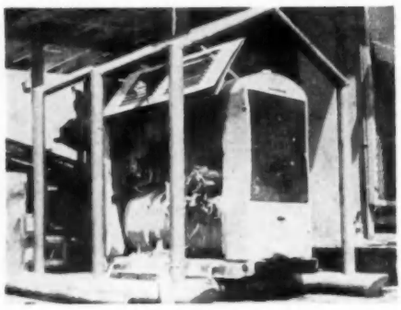
Tong Counter-Weight Held in Position

TO assist in prevention of accidents on the derrick floor, a North Texas contractor has constructed pipe tong counter-weights of line pipe with a 2-inch nipple welded the full length of the weight on one side. When rigged up, the counter-weight slides up and down with a 1¼-inch pipe



Pipe tong counter-weight rigged so as to prevent accidents from side sway.


TRET-O-LITE
SKILL resulting from many years of specialized experience, and the fresh outlook of an up-to-date organization are combined in the Tretolite Company. Use Tretolite's Advisory Service, and you will know then the satisfaction which can be yours when Tretolite assists in your oil treating problem. You will see then why Tretolite has become the standard of comparison wherever oil is produced.
TRETOLITE COMPANY
Manufacturing Chemists
DALLAS ST. LOUIS LOS ANGELES
Representatives in All Principal Fields



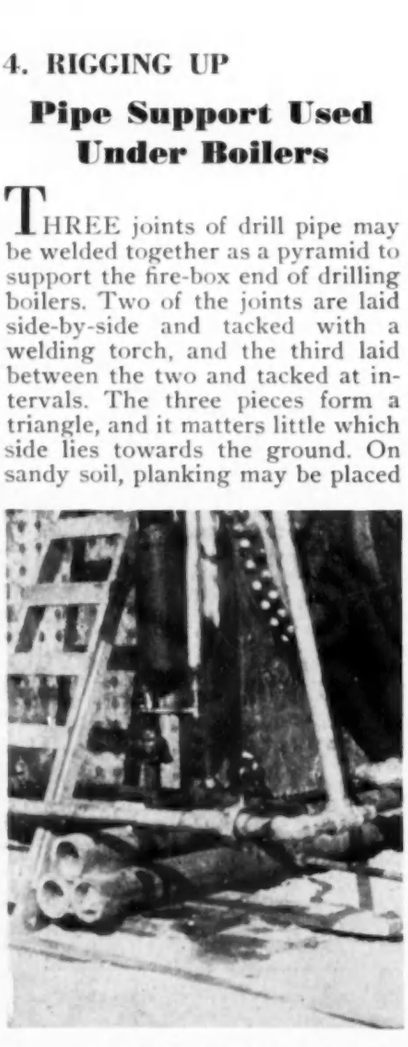
A cage of two-inch pipe protects this lightning unit and aids in transportation.

passed through the 2-inch guide. The 1¼-inch pipe is fastened to the floor and the first girt of the derrick so that side-sway is eliminated.

4. RIGGING UP

Pipe Support Used Under Boilers

THREE joints of drill pipe may be welded together as a pyramid to support the fire-box end of drilling boilers. Two of the joints are laid side-by-side and tacked with a welding torch, and the third laid between the two and tacked at intervals. The three pieces form a triangle, and it matters little which side lies towards the ground. On sandy soil, planking may be placed between these supports to prevent sinking with the weight of the boilers.



Three joints of drill pipe form a base for the fire-box end of this boiler.

5. LIGHTING

Unit Protected by Pipe Guard

NOBLE DRILLING COMPANY has constructed a cage for its rig-lighting unit of 2-inch pipe with a 4-inch skid-type base. The side members rise well above the top of the hood of the lighting unit, with rafters joining above the center line. A ridge pole extending lengthwise stabilizes the cage, which serves also as a means of picking the unit up bodily to move from one place to another.

6. MUD HANDLING

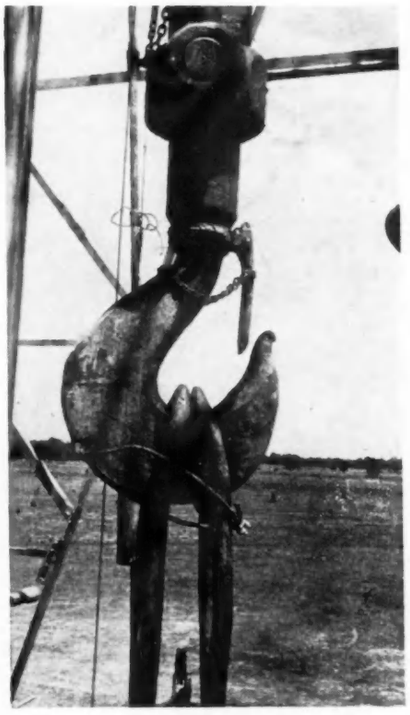
Stream Conducted by Sluice Box

HAR-BAR Drilling Company uses a sluice box from the rig to the shale shaker to handle drilling mud. To obtain samples of the cuttings, an eddy box is attached to one side of the sluice. A diagonal baffle upstream from the entrance to the sample box diverts a part of the mud carrying the cuttings into the box, but the major portion of the mud and cuttings flow over the baffle. A second diagonal baffle downstream from the sample box prevents the wash of the mud stream from carrying the samples with it.

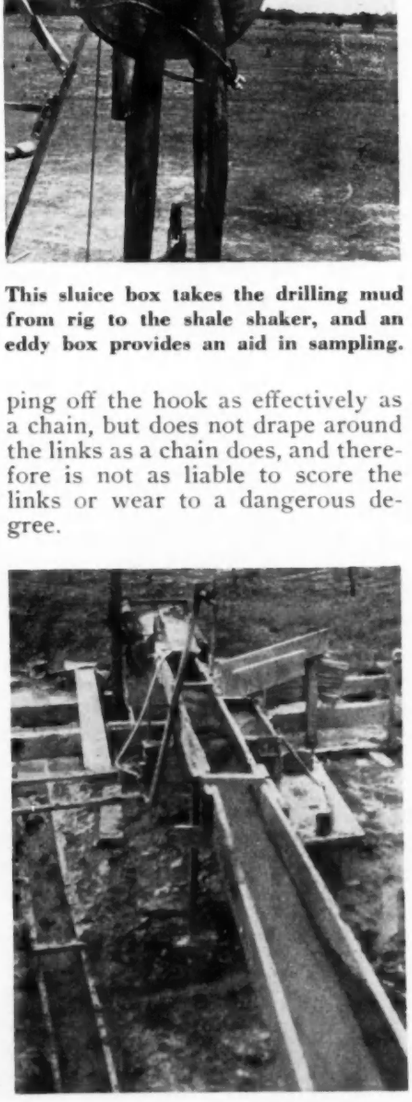
7. SAFETY

Cable Holds Links to Drilling Hook

ONE Gulf Coast operator supplants conventional chain safety on rotary drilling hooks with a section of wire cable passed through the links and fastened with a single U-bolt or wire-line clip. The cable prevents excessive jumping or slipping off the hook as effectively as a chain, but does not drape around the links as a chain does, and therefore is not as liable to score the links or wear to a dangerous degree.



This sluice box takes the drilling mud from rig to the shale shaker, and an eddy box provides an aid in sampling.



A piece of cable prevents links from jumping from the rotary drilling hook, and is not subject to excessive wear.

HIGHLIGHTS IN THE WEEK'S NEWS

Washington

Administration Cold to Jap Protest Against Embargo

Administration officials in Washington last week were cold to protests of the Japanese government against the embargo of exports of aviation gasoline to countries outside the Western Hemisphere, and remained unmoved by Japanese threats that maintenance of the ban on exports would further widen the breach between the two countries.

Preceding by less than a week the stiffening of British resentment over Japan's treatment of her nationals, resulting in the arrest of highly placed Japanese in England and other parts of the British Empire, President Roosevelt's embargo order was taken by Japan as a move specifically directed toward her.

Japanese Ambassador Kensuke Horinouchi last week presented to Undersecretary of State Sumner Welles, on behalf of his government, a note of protest against the embargo, details of which were not made public.

Brown and Hurley Appear On Oil Imports Measure

Failure to shut off imports of oil from properties confiscated by the Mexican government may force the abandonment of United States producing fields, leaving the country "in a serious and difficult position," the House Judiciary Committee was told August 6 by Russell B. Brown, general counsel of the Independent Petroleum Association of America.

Brown appeared in support of the Sheppard-McCormack bill, barring imports of property confiscated by foreign governments without adequate payment to the owners, and testified that during the first five months of this year imports from Mexico amounted to 4,486,000 barrels as compared with 70,831 barrels in the corresponding period in 1939.

"These imports are increasing at a rapid rate," he said. "During January of the present year they averaged 13,000 barrels per day. In May, the latest month for which official figures are available, they have risen to an average of about 40,000 barrels daily.

"If, through forced abandonment of many of our fields through inability to compete with confiscated Mexican oil, we attempt to rely upon this source for our supplies of essential petroleum products, we will find ourselves in a serious and difficult position. International circumstances may make this supply no longer available. For our needs in peace time as well as for possible needs in a national emergency, it is of supreme importance that we maintain our domestic petroleum industry in such a condition that it can always meet whatever demands may be made upon it. This cannot be done if confiscated oil continues to absorb an increasing portion of our markets."

State Department officials indicated their opposition to the bill as an inference with international trade, and indicated that the measure did not have the approval of the Administration.

A charge that the measure was the result of "propaganda on the part of Standard Oil Company of New Jersey" aimed at disrupting the agreement entered into by the Sinclair group and Mexico in settlement of the expropriation of Sinclair oil properties was made by Patrick J. Hurley, former United States Secretary of War and now counsel for Consolidated Oil Company.

Courts

Circuit Court Upholds Phase of Kansas Law

In the first appellate court ruling on the new Kansas oil and gas conservation law, the Tenth Circuit Court of Appeals last week upheld the state's right to charge overproduction against an operator who ran oil from a common pool in excess of that produced by other operators under an order of the Kansas Corporation Commission.

The decision, delivered by Judge Orie L. Phillips, reversed a ruling by Judge Richard J. Hopkins, and was in an action involving Jesse Wall, receiver for the Skiles & Hinerman lease in the Campbell pool, Rice County.

News Index

General:
- Allowables 51
- Courts 51
- Washington 51
- Pipe Lines 52

Men in News 53

Markets-Statistics 55

World Wide Developments ... 57

U. S. Field Operations:
- Arkansas 67
- California 68
- Completions 69
- East Texas 64
- Forest City Basin 61
- Illinois 60
- Indiana 60
- Kansas 59
- Kentucky 61
- Louisiana Coast 66
- Michigan 61
- Mississippi 67
- New Mexico 68
- North Louisiana 67
- North Texas 62
- Oklahoma 59
- Rocky Mountain 68
- Southwest Texas 64
- Texas Gulf Coast 65
- West Texas 62
- Wildcat Development 74

Allowables

Compact Meeting Called for August 23, Oklahoma City

Governor Leon C. Phillips last week called a meeting of the Interstate Oil Compact Commission for August 23 in Oklahoma City.

Among speakers invited were Dr. A. G. White, of the United States Bureau of Mines; Fred VanCovern, director of statistics for the American Petroleum Institute, and H. B. Fell, executive vice president of the Independent Petroleum Association of America.

Commenting on the meeting, Russell B. Brown, general counsel for the Independent Petroleum Association of America, called attention to comments of newspaper writers of oil-producing states.

"There runs through each of these articles a criticism of the regulatory bodies in the other oil-producing states. I have talked to a number of officials of the state regulatory bodies during the past year and visited some of their hearings. Almost without exception, I find the members of the regulatory body from one state saying that their action is hampered by the unwillingness of the regulatory bodies from other states.

"I have seen nominations by purchasers that if allowed would destroy our entire conservation program. I have heard individual producers demand production allowables that if granted to others similarly situated would result in production far in excess of any possible demand. Through it all there seems to be a lack of understanding and confidence between members of the industry and state regulatory bodies."

Kansas Cuts Allowable To 170,607 Barrels Daily

Kansas crude oil allowable for August was set at 170,607 barrels daily, a reduction of 7793 barrels from the July quota.

Theo. A. Morgan, conservation director, said the allowable represented a 3⅓ percent reduction in prorated production based on the United States Bureau of Mines recommendation of market demand, plus 4000 barrels daily of new oil and 4000 barrels daily of shortages operators are being permitted to make up.

The cut in prorated production was made, Morgan said, "to balance crude oil of Kansas origin going into storage."

Texas Adds Two Shutdown Days to Reduce Production

The Texas Railroad Commission has entered an order adding two days to the shutdown period for August. Previous orders provided for 7 days shutdown, and the new order, entered August 3, provides for closing all fields on August 15 and August 22. This shutdown

will reduce the daily average allowable for August by 85,000 barrels.

The total Texas allowable, as scheduled on August 3, was 1,579,926 barrels daily. Under the new plan, the fields will produce at this rate for 22 days of the month, or a total of 34,758,372 barrels. In addition, the commission has allowed production of 253,875 barrels on the days to which the shutdown order applies, adding 2,284,875 barrels for the nine days of August and bringing the total August allowable to 37,043,247 barrels.

Thus, the allowable for August should average approximately 1,194,247 barrels, or 131,457 barrels less than the estimate of consumer demand set by the United States Bureau of Mines.

Bureau Reports Crude Decline for Third Successive Month

Declining for the third successive month, domestic crude oil production in June averaged 3,723,000 barrels a day, or 90,000 below the 3,815,600-barrel average of the preceeding month, although 236,100 barrels above the June, 1939, average of 3,486,900 barrels, it was reported August 9 by the United States Bureau of Mines.

Output for the month was 111,690,000 barrels, compared with 118,283,000 barrels in May and 104,607,000 barrels in June, 1939, bringing the total for the first half of the year to 687,901,000 barrels, an increase of 64,510,000 barrels over the 623,391,000 barrels produced in the corresponding period last year, the bureau announced.

West Texas Geologists Meet August 17 at Midland

Papers on geology of West Texas and New Mexico will comprise the technical program for the fall meeting of the West Texas Geological Society at Midland, August 17. An outdoor barbecue and smoker will be held in the evening.

Papers scheduled include: "A study of the Stratigraphy of the Ellenburger Formation," by Leo Hendricks, geologist with the Bureau of Economic Geology, University of Texas, Austin; "Position of the San Andres Group, West Texas and New Mexico," by Frank E. Lewis, consulting geologist, Midland; "Whitehorse-San Andres Contact on and Adjacent to Central Basin Platform," by N. B. Winter and R. T. Cox, geologists for The Atlantic Refining Company, Midland; "Insuluble Residue Study of the Holt Pay, Ector County, Texas," by Taylor Cole, geologist for University Lands, and C. M. Linehan, geologist for Standard Oil Company of Texas, Midland; "Photographs of the Sacramento Mountains," by Cary P. Butcher, geologist for Tide Water Associated Oil Company, Midland; "The producing zones of Eddy County, New Mexico," by John A. Barnett, district engineer with the United States Geological Survey, Roswell, New Mexico; "Insoluble Residues in the Whitehorse and Salado of New Mexico," by Ronald K. DeFord, geologist for Argo Oil Corporation, Midland, and "The Page Field in Schleicher County, Texas," by Roscoe Simpson, geologist for Cardinal Oil Company, San Angelo, Texas.

Pipe Lines

Magnolia Lets Contract for Ft. Worth-Oklahoma City Line

Magnolia Pipe Line Company has awarded contract to Williams Brothers Corporation for construction of its previously announced refined oil products carrier to extend from Magnolia Petroleum Company's Fort Worth refinery to Oklahoma City. The line will involve 190 miles of 4-inch pipe, and will have a rated capacity of 3000 barrels daily, using 2 booster stations. Pipe has been delivered and stacked at intervals along the right-of-way. Contractor is due to start work with one crew by mid-August, and a second gang will be engaged shortly thereafter.

National Refining Company to Build 54-Mile Kansas Line

National Refining Company will soon award contract for a 54-mile 8-inch pipe line from its Hooser station in Cowley County, Kansas, to its trunk line at Coffeyville, Kansas. The line will gather stripper-well production in Cowley, Chautauqua and Montgomery counties, Kansas.

Short Gas Line

Southern Union Utilities Company, Dallas, is laying 8 miles of 4-inch natural gas line from the White-Baker shallow gas area, northern Pecos County, to tie into a system that delivers gas to domestic and commercial consumers at McCamey, Texas. The company has a plant for the removal of sulphur from the gas. Contract has been made by the company for purchase of sweet gas from Kenneth Slack et al's Delaware lime discovery in the Quito area, Ward County, and will lay 1½ miles of 3-inch line to tie this well into its 6-inch system that serves Pecos and other West Texas communities.

Complete Short Gas Line

Lone Star Gas Company completed construction work last midweek on its 22-mile 12-inch welded natural gas line from the Opelika deep gas-distillate field, Henderson County, East Texas, to Trinidad, where the company operates a 100,000,000-foot daily capacity natural gasoline extraction plant on its Cayuga-Irving 20-inch carrier. However, the new line was built primarily to supply a minimum of 10,000,000 cubic feet of gas daily to the Texas Power & Light Company's electric power generating plant at Trinidad.

Stanolind Lets Contract for New K-M-A Outlet

Approximately 50 miles of line will be layed by Stanolind Pipe Line Company in carrying out its previously announced plans to enter the K-M-A field, largest producing area in North Texas, to handle in excess of 5000 barrels of daily crude runs booked by Stanolind Crude Oil Purchasing Company. The O. C. Whitaker Company has been given the construction contract.

The field gathering system will embrace about 35 miles of 3-, 4-, 6- and 8-inch pipe. A booster station will be erected on the south bank of the Big Wichita River and in north portion of Block 1, F. Peterswick Survey A-243. A 10-mile 6-inch discharge line will be built to a point near Electra, where connection will be made with an idle 6-inch carrier, which extends 17 miles east by north to the Burkburnett field. A 4-mile 4-inch unit in the latter sector will be replaced with 6-inch pipe, and new crossing will be strung in negotiating the bed of the Red River in reaching an 8-inch trunk line at Devol, situated on the Oklahoma bank of the river. The company's Devol-Healdton 60-mile 8-inch carrier will handle 15,000 barrels daily by gravity.

This new outlet, the sixth for the K-M-A field, is scheduled to be placed in operation in early September.

Texas Pipe Line Tax Values Increased a Million Dollars

Intangible tax assessments on Texas pipe lines have been made on a tax valuation of $47,267,100. This is about $1,000,000 higher than the assessed value for 1939.

Below is a list of the lines and the comparative assessments for 1939 and 1940:

	1940	1939
Atlantic Pipe Line Co.	$ 5,044,000	$ 5,244,000
Alamo Pipe Line Co.	29,700	.....
American Liberty Pipe Line Co.	644,100	750,000
Amsco Pipe Line Co.	268,000	259,400
Arkansas Pipe Line Co.	393,300	488,000
Barnsdall Oil Co.	286,900	383,100
Beacon Oil & Refining Co.	7,800	.....
Bell General Transit Corp.	84,400	94,700
Cardinal Pipe Line Co.	2,000	5,400
Col-Tex Refining Co.	94,100	57,000
Cordele Pipe Line Co.	34,700	.....
Corpus Rosa Pipe Line Co.	58,900	.....
Crown Central Trans. Co.	28,700	55,400
Danciger Oil Refineries Inc.	43,700	31,900
Danube Oil Corp.	1,100	.....
De Sota Crude Oil Purchasing Corp.	39,800	.....
Duval Pipe Line Co.	403,500	434,700
Eastern Pipe Line Co.	1,000	.....
Empire Pipe Line Co.	114,800	60,600
Evangeline Pipe Line Co.	5,500	.....
Leo Glover Pipe Line Co.	900	3,400
Gulf Refining Co.	3,419,300	3,000,000
Hemby Pipe Line Co.	1,100	.....
Humble Pipe Line Co.	8,487,500	8,959,000
McCutchin Pipe Line Co.	3,300	.....
Maco Stewart & Son.	7,800	.....
Magnolia Pipe Line Co.	2,811,000	3,000,000
M-A-R Pipe Line Co.	105.100	74,000
Moutray Refining Co.	3,100	.....
North Texas Refining Pipe Line Co.	2,300	.....
Pan-American Pipe Line Co.	1,294,400	1,153,000
Panola Pipe Line Co.	16,500	9,100
Pasotex Pipe Line Co.	501,800	315,000
Premier Oil Refining Co.	5,900	.....
Pure Transportation Co.	705,600	630,000
Reagan County Purchasing Co.	38,800	24,000
Republic Pipe Line Co.	897,300	978,800
Rotan Pipe Line Co.	1,600	.....
Shamrock Oil & Gas Co.	34,300	9,200
Shell Pipe Line Co.	3,100,000	3,650,000
Sinclair Refining Co.	5,820,000	5,000,000
Southern Pipe Line Co.	169,800	178,700
South Plains Pipe Line Corp.	14,500	.....
Standish Pipe Line Co.	63,100	50,000
Sun Pipe Line Co.	1,480,300	1,466,300
Talco Pipe Line Co.	96,700	64,400
Texas Pipe Line Co.	2,418,600	2,067,700
Texas-Empire Pipe Line Co.	2,889,600	3,250,000
Texas-New Mexico Pipe Line Co.	3,492,000	2,587,000
Tidal Pipe Line Co.	751,800	779,500
Toronto Pipe Line Co.	97,700	90,000
Webb County Gathering System	15,000	786,900
Yount-Lee Pipe Line Co.	834,400	9,700
Atlas Pipe Line Co.	.....	2,680
Nueces Pipe Line Co.	.....	131,900
Total	$47,267,100	$46,134,480

MEN IN THE INDUSTRY'S NEWS

JAMES KEWLEY, who joined Shell Transport & Trading Company in 1906, has resigned as chief chemist for Asiatic Petroleum Company and Anglo-Saxon Petroleum Company, Shell affiliates. He was one of the founders of the Institute of Petroleum Technologists, now the Institute of Petroleum, served as its president in 1931-33, and took part in organization of the first World Petroleum Congress. He has been succeeded by John O. Oriel.

IRA H. CRAM, chief geologist for The Pure Oil Company in Tulsa, has been advanced to assistant to the chief geologist and transferred to the company's headquarters in Chicago. Cram has been with the company for the past 16 years, working out of the Mid-Continent office in Tulsa. He has written numerous geologic articles on Mid-Continent oil structures.

MYRON C. KIESS, who has been doing geological and geophysical work for The Pure Oil Company in its southwestern division for 15 years, has been made division geologist, succeeding Ira H. Cram. He will make his headquarters in Tulsa.

M. B. OWNBY, assistant chief clerk in the telephone and telegraph department of Gulf Refining Company, Houston, has been transferred to Fort Worth to take charge of communications in the North and West Texas districts, succeeding the late J. H. Lancaster.

JOHN M. COOPER, head of the Cooper Gas Company with headquarters at San Angelo, Texas, is vacationing in Los Angeles, his former home, after completing preliminary exploratory campaign in the Page field, one of the largest sources of sweet gas in West Texas.

MALVIN G. HOFFMAN, former chief geologist with Midco Oil Corporation, Tulsa, and who later resigned to work as a consulting geologist, is now associated with Geochemical Service Corporation, Tulsa, as service engineer and sales geologist.

ARTHUR HARVEY is president of the newly organized Tex-Harvey Oil Company of Dallas. Other officers are J. F. Gibbons, secretary - treasurer; Dorsey Hager, chief geologist, and John H. Cooper, drilling superintendent.

W. P. NORRIS has resigned as division superintendent and director of Eureka Pipe Line Company, Parkersburg, West Virginia, ending 52 years service in the pipe line industry.

M. L. CURTIS, training supervisor for The Carter Oil Company, spoke before the Seminole chapter of the A.P.I. August 9 on "New Technique of Supervision."

J. F. HARGIS, M. Fullingham and J. E. Johnston with The Pure Oil Company at the Seminole office have been transferred to the Cumberland district in Marshall County, Oklahoma. Other transfers to the area include L. B. King, A. M. Mansfield, Leonard New, all of Cushing; C. B. Hard and George Lambert, of Osage; J. B. Best, Mexia; Robert Fall, Melvin James, Clarence Legg, Dwight Peterson, Herman Reese, Robert Sensabaugh, Dewey Stewart and Howard Willis, all of Michigan.

F. L. WHERAN has been named president of British Dominion Oil & Development Corporation, Calgary, Alberta, Canada. Other officers named are L. H. Fenerty, vice president; Hardie Turnbull, secretary-treasurer; Mrs. L. Stokes, assistant secretary, and Clifton C. Cross and J. I. England, directors.

FRANK V. WILLIAMS, former manager of the Corsicana, Texas, district office of Lone Star Gas Company, has been named division superintendent, succeeding Leon M. Scholl, transferred to Denison, Texas.

R. E. WILSON, petroleum technologist and advisor to the National Defense Advisory Commission at Washington, has been invited to address the Interstate Oil Compact Commission meeting in Oklahoma City, August 23.

ALEXANDER FRASIER, president of Shell Oil Company, was in Tulsa last week visiting company offices. Frasier also visited Kansas properties before going to his new headquarters in New York City.

WALTER K. SCHMIDT, vice president and general counsel for Wolverine Natural Gas Company, Grand Rapids, Michigan, has been named to the company's board of directors. He succeeds the late Frank Peterson.

K. C. SPOONER, division geologist for Atlantic Refining Company at Houston, has been transferred to Jackson, Mississippi.

WILLIAM FARRAR, geologist for Skelly Oil Company, has been transferred from Evansville, Indiana to Jackson, Mississippi.

J. R. HARRISON, landman for The Texas Company, has been transferred from Mattoon, Illinois to Shreveport.

JAMES M. JOHNSTON, engineer for Shell Oil Company at Tonkawa, Oklahoma, has transferred to a new job at Wichita Falls.

LESTER L. WHITING, district geologist for The Texas Company at Oklahoma City, recently returned from a vacation in Wisconsin and Iowa.

WILLIAM LEAS, University of Oklahoma graduate, has joined the geophysical research laboratory of Amerada Petroleum Corporation at Tulsa.

C. H. JONES, gasoline department of Sinclair Prairie Oil Company, stationed at Corpus Christi for the past several months, has returned to the Tulsa office.

WILLIAM G. SKELLY, Tulsa, last week succeeded Freeman W. Burford, Dallas, as president of East Texas Refining Company with acquisition of controlling interest in the latter firm by Skelly Oil Company. Other new officers are C. C. Herndon and L. F. Brothers, vice presidents, and F. T. Hopp, secretary-treasurer.

East Texas Refining Company has 50 wells in the East Texas field with an extensive crude gathering system supplying its 10,000-barrel capacity skimming and cracking plant at Longview Junction. The company also has holdings in the Rodessa field, Louisiana.

W. A. GUINN, official of Paynee Royalty Company, which qualified late in July for the $15,000 bonus posted by the State of Nebraska for the completion of the first commercial oil producer, is erecting a $40,000 ranch home near San Angelo, Texas. The prize well opened the Falls City pool, which now has 5 producers, on a 66,000-acre drilling block. Guinn operated in West Texas, with headquarters at Odessa, prior to the Nebraska wildcat venture. B. G. Guinn of Slaton, Texas, a brother, is co-owner of Paynee Royalty Company.

C. E. SAVAGE, scout for The Carter Oil Company, recently on leave of absence, is now stationed at Bismarck, North Dakota. Savage previously has worked in the Mid-Continent division, was at one time chief scout in the Rocky Mountain district and prior to his recent leave, was chief scout of the eastern division of The Carter Oil Company with headquarters at Mattoon, Illinois.

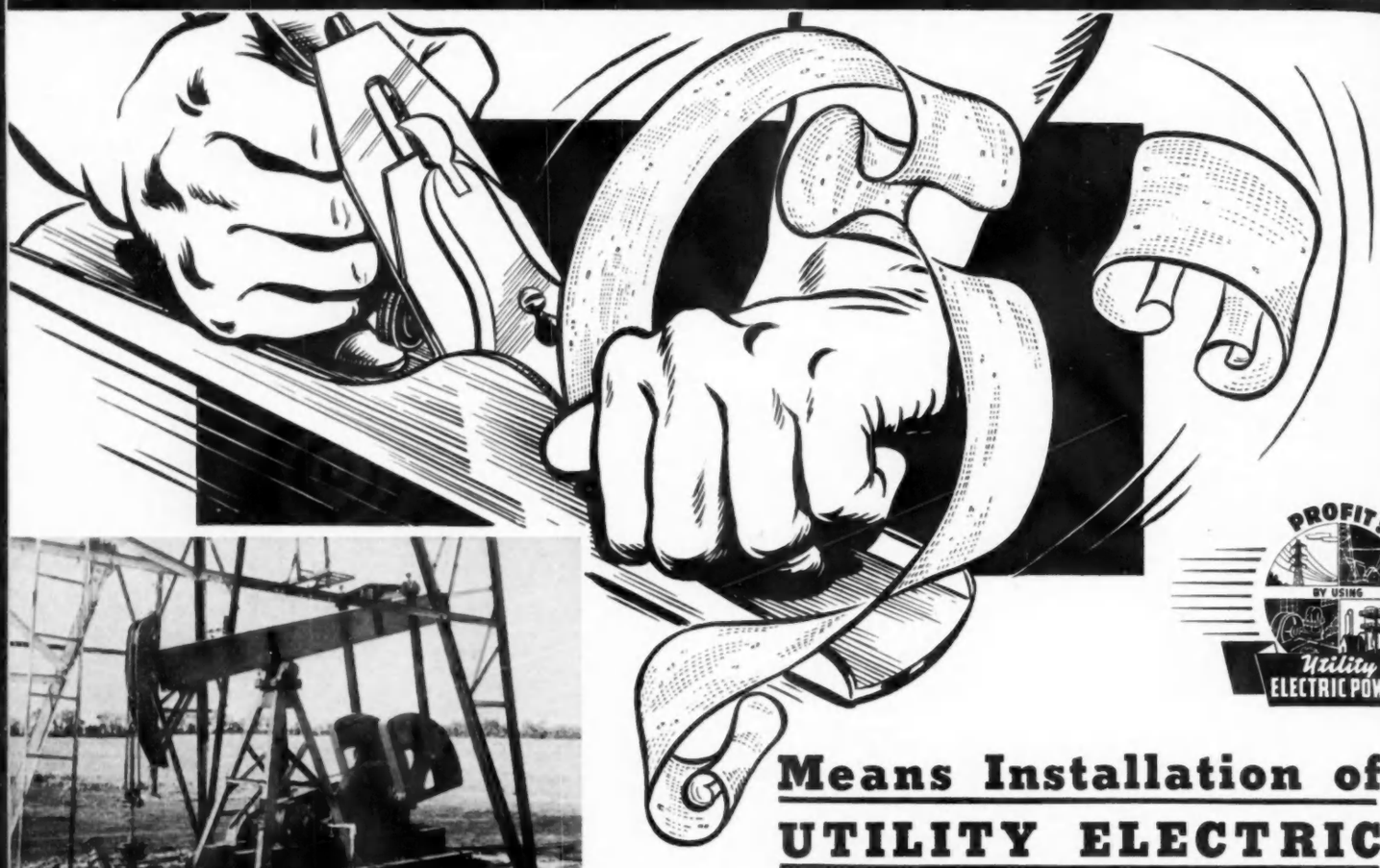
JESUS SILVA HERZOG, general manager of the distributing affiliate of Petroleos Mexicanos, the Mexican government's organization for conducting the oil industry there, resigned August 6 with the explanation, "my resignation leaves the government free to deal directly with the workers."

S. F. SHAW, consulting engineer, has returned to San Antonio from a trip to West Texas, Gulf Coast, and Oklahoma City fields.

CHESTER BAIRD, chief geologist for Mene Grande Oil Company, sailed last week from New York for Maracaibo, Venezuela.

WILLIAM D. RICHARDSON, 65, pioneer refinery operator in the Southwest, died August 4 in a hospital at Fort Worth, where he had resided the past decade. His initial refinery activities involved a plant near Quincy, Illinois, and in 1896 he moved to Texas to erect a small plant at Corsicana. Other plant projects followed in Oklahoma and Kansas. He joined Josh S. Cosden in the installation of a plant at Big Spring, Texas, in 1929, and in 1939 erected a refinery at Levelland, Texas, but severed his connection before the end of the year.

SHAVING POWER COSTS...



Means Installation of UTILITY ELECTRIC POWER!!!

That old adage of "Shaving Costs" was never more popular than now.

From the chief engineer down to the field superintendent the watchword is "Reduce pumping costs, if possible." And always the perplexing question is: "How?"

If one can be governed by thousands of actual performance records, we say that Utility Electric Power is the solution, because . . .

First, your Electric Power Service Company assumes the capital power investment. You pay for the power only as you use it. Thus, you avoid tying-up capital in power manufacturing facilities, and can use this money for other purposes.

Second, electrically powered equipment has a low initial investment and requires practically no maintenance; is easy and economical to install and to move from one location to another; brings a high salvage value; is flexible and extremely adaptable; starts and stops automatically; operates smoothly and quietly; and is practically the lowest cost essential for pumping wells.

Many other advantages are available with Utility Electric Power, all of which result in substantially "Shaving power costs." Why not profit by its benefits? It will cost you nothing to investigate.

Use Utility Electric Power

• *The Petroleum Electric Power Association is the outgrowth of a desire on the part of Electric Power companies to render greater service, through cooperative effort, to the Petroleum Industry.*

PETROLEUM ELECTRIC POWER ASSOCIATION

Small Production Advance Leaves Effective Control

United States crude production advanced 16,675 barrels daily for the week ended August 10. Advances were in Texas, Illinois and California, while Kansas and Oklahoma declined. Production for the country totaled 3,492,000 barrels, or 165,700 barrels under the United States Bureau of Mines' estimate of daily market demand.

Production for the week ended August 3 indicated effective control of operations at wells and refineries.

Crude-oil production was at the lowest level since last October and materially under indicated demand, due to an extra shutdown day in Texas. Runs to stills were further curtailed and were almost down to the corresponding week of last year. Gasoline production consequently was smaller than in the previous week, and stocks of that product were further reduced, although less than in the several preceding weeks. Stocks of light fuel oil were further increased 1½ million barrels, and thereby were placed into better relationship to expanded demand. Heavy-fuel-oil stocks were increased a million barrels, a satisfactory change in view of the prevailing relatively good demand for that product.

United States crude oil production was down 196,850 barrels in the week of August 3, when it averaged 3,493,550 barrels daily, according to the American Petroleum Institute. That was 135,000 barrels less than the indicated average daily market demand for July and 165,000 barrels a day less than the estimated August demand. The output was 10 percent smaller than that in the corresponding week last year, which was the highest on record so far—3,909,400 barrels daily in the week ended August 5, 1939.

Crude runs to stills were reduced 30,000 barrels to 3,510,000 a day in the week ended August 3. That rate was only 1.5 percent greater than the daily average runs of 3,458,000 barrels in July and August of last year.

Production of gasoline amounted to 11,249,000 barrels, which was 225,000 barrels less than the output in the preceding 7 days.

Demand for gasoline appeared below normal, as only 681,000 barrels were withdrawn from storage, whereas decreases had been over a million barrels weekly in the several preceding weeks, with the plants turning out more production than in the more recent period.

The stocks of finished and unfinished gasoline in the United States totaled 89,492,000 barrels on August 3. That was 12,000,000 barrels, or nearly 16 percent, more than the 77,310,000 barrels on hand a year previously; and the excess over a year ago was largely surplus gasoline, as stocks were ample a year ago, while total demand is very little larger now than at that time, because of sharply curtailed exports.

Stocks of light fuel oils have been steadily expanded until they are in a materially improved relationship to prevailing and prospective large demand. Having increased over 1,500,000 barrels in the week ended August 3, the inventory of gas oil and distillate fuel totaled 40,448,000 barrels, compared with 35,561,000 barrels at the corresponding time last year, a 14 percent gain over the latter figure.

The national inventory of heavy fuel oil is 7½ percent smaller than a year ago, but there was a million-barrel addition in the week of August 3, when the stocks rose to 106,919,000 barrels. The large addition was satisfactory, as the national defense program promises to cause an increase in the demand for heavy fuel oils by industry.

Crude oil stocks totaled 262,579,000 barrels on July 27, the Bureau of Mines reported.

Weakness of Gasoline Keeps Market Clouded

The industry's markets have not been as firm during the past 10 days as might have been expected, in view of scheduled strict control of crude production in August and the restoration of former crude prices in North and Central Texas.

Although markets for refined products are supported by the strict crude control program, lower production in Illinois, and an improved crude market in the Mid-Continent, there has been some further weakening of prices of gasoline, while other products have been marked down again in some instances.

The gasoline situation is, of course, the most unfavorable component of the general market picture, prices at refineries being at the lowest levels since 1933, as unwieldly stocks preclude normal trade conditions.

The inventory of gasoline is 12,000,000 barrels greater than at this time last year, whereas no expansion of stocks over a year ago would have been needed. (Storage was adequate—in fact, larger than necessary—a year ago, and total demand is very little greater now than then, with exports extremely low.)

Some refiners in Oklahoma last week were offering all grades of gasoline for ⅛ cent a gallon less than previously, although prices ranged on upward as high as before.

On the Atlantic seaboard, also, wholesale prices of gasoline were marked down, the minimum quotations having been lowered ⅛ to ¼ cent a gallon on all grades at New York, Philadelphia, Boston, and other points.

In the Middle West, the gasoline market was comparatively steady, prices having remained generally unchanged. The situation in that district possibly reflected the diminishing production of Illinois crude oil, which has forced shutting down and abandonment of small refineries and lack of adquate supplies of the relatively cheap Illinois crude for processing in plants of larger companies in the district. The state's crude output has declined over 100,000 bar-

Trends of Operations and Changes in Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1937:						
August 28	[5]3,731,450	3,425,000	309,506,000	66,997,000	112,111,000	
September 25	3,666,300	[5]3,455,000	307,974,000	65,620,000	116,472,000	
1938:						
March 19	3,433,550	3,080,000	306,380,000	[5]93,192,000	122,067,000	
November 12	3,243,250	3,180,000	273,394,000	[6]67,551,000	34,175,000	120,491,000
December 10	3,245,100	3,150,000	[6]269,509,000	68,687,000	32,068,000	118,711,000
December 31	3,201,450	3,115,000	273,024,000	71,695,000	29,082,000	115,741,000
1939:						
April 22	3,526,700	3,280,000	277,156,000	[2]87,769,000	21,085,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[2]278,607,000	86,216,000	26,167,000	108,597,000
July 29	3,539,100	3,460,000	268,513,000	77,887,000	34,900,000	114,053,000
August 5	[3]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 26	[9]1,690,800	3,475,000	246,982,000	73,475,000	37,722,000	116,237,000
September 30	3,658,200	3,560,000	233,023,000	71,168,000	38,081,000	115,466,000
October 7	3,435,850	3,505,000	231,564,000	[6]71,152,000	38,549,000	114,397,000
October 21	3,771,550	[2]3,650,000	[2]229,127,000	72,122,000	39,358,000	115,060,000
October 28	3,498,500	3,520,000	230,453,000	72,660,000	39,562,000	114,786,000
November 25	3,818,100	3,510,000	231,811,000	75,595,000	38,527,000	112,106,000
December 30	3,545,000	3,445,000	237,742,000	80,985,000	34,184,000	106,680,000
1940:						
January 27	3,611,600	3,470,000	237,339,000	87,914,000	27,407,000	103,015,000
February 24	3,732,100	3,490,000	240,836,000	96,719,000	25,390,000	103,419,000
March 30	3,841,250	3,585,000	250,561,000	101,370,000	23,778,000	105,081,000
April 20	3,858,550	3,535,000	254,881,000	[1]102,817,000	24,779,000	103,323,000
April 27	3,845,250	3,555,000	256,670,000	102,452,000	24,997,000	102,552,000
May 25	3,835,650	3,580,000	259,330,000	100,297,000	28,356,000	104,015,000
June 22	3,846,450	[3]3,690,000	260,891,000	97,276,000	32,751,000	104,683,000
June 29	3,639,550	3,625,000	262,059,000	95,142,000	33,590,000	104,486,000
July 6	3,602,400	3,575,000	261,732,000	93,275,000	34,730,000	105,343,000
July 13	3,560,750	3,565,000	261,494,000	92,372,000	36,221,000	105,710,000
July 20	3,580,350	3,540,000	261,596,000	91,789,000	37,504,000	105,864,000
July 27	3,690,400	3,555,000	262,579,000	90,173,000	38,981,000	105,924,000
August 3, 1940	3,493,550	3,510,000	.....	89,492,000	40,448,000	106,919,000
August 3, 1939	3,909,400	[8]3,458,000	[4]268,513,000	77,310,000	35,561,000	115,546,000
Change in past year	—10.6%	+1.5%	—2.2%	+15.8%	+13.8%	—7.5%

[1] All time peak. [2] Peak for 1939. [3] Lowest since April, 1922. [4] Stocks, July 29, 1939. [5] Peak prior to 1939. [6] Lowest for year. [7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California. [8] July-August, 1939 daily average. [9] Lowest since October, 1922, due to the shutdown of six Mid-Continent States.

rels from its peak of over 500,000 daily a little over a month ago.

Kerosene prices last week were generally the same as previously, but range oil and light fuel oils were offered for ⅛ cent a gallon less than before by some refineries in Oklahoma-Kansas.

Bunker C fuel oil weakened further on the Atlantic coast, prices having been marked down 10 cents a barrel in New York harbor to a range of $1.15 to $1.25, ships' bunkers.

Lubricating oils have steadied following their protracted decline.

Wholesale Price of Refined Products

	Range Late Last Week (Cents a gal.)		Changes from week Before	
REFINED GASOLINE				
Oklahoma Refineries:				
60 Octane and under	3⅞	4¼	—⅛	...
63-66 Octane	4¼	4⅜	—⅛	...
72-74 Octane	4⅝	5¼	—⅛	...
Mid-Western Tank Car:				
60 Octane and under	3⅞	4¼	...	...
63-66 Octane	4¼	4⅜	...	...
72-74 Octane	4⅝	5¼	...	...
New York Harbor:				
70 Octane and under	5½	6	—¼	—¼
72-74 Octane	5½	6¾	—¼	...
NATURAL GASOLINE				
Grade 26-70:				
F.O.B. Group 3	1½	1½	...	...
F.O.B. Breckenridge, Texas	1¼	1¼	...	...
KEROSENE				
Oklahoma Refineries:				
41-43 water white	3⅞	4¼	...	...
42-44 water white	4	4⅝	...	...
Mid-Western Tank Car:				
41-43 water white	3⅞	4¼	...	...
42-44 water white	4	4⅝	...	...
New York Harbor	5¼	5⅛	...	...
RANGE OIL				
At Oklahoma Refineries	3½	3⅞	—⅛	...
In Mid-Western Market, Group 3 basis	3½	3⅞	—⅛	...
LIGHT FUEL OILS				
Oklahoma Refineries:				
No. 1 straw	3¼	3½	—⅛	...
No. 3	3⅛	3⅜	—⅛	...
Mid-Western Tank Car:				
No. 1 straw	3½	3⅝	...	...
No. 3	3⅛	3⅜	...	...
New York Harbor:				
No. 1	5¼	5¼	...	...
No. 3	4⅜	4⅜	...	...

	Range Late Last Week (Per Bbl.)		Changes from week Before	
HEAVY FUEL OILS				
Oklahoma Refineries:				
No. 6	$0.55	$0.55	...	...
Mid-Western Tank Car:				
No. 5	.75	.75	...	...
No. 6	.50	.55	...	...
New York Harbor:				
No. 5	1.45	1.70	...	...
No. 6	1.15	1.25	—.10	—.10
BUNKER C FUEL OIL (Per barrel, ships bunkers)				
Gulf Coast	$ .80	$ .90	...	...
New York Harbor	1.15	1.25	—.10	—.10
DIESEL OIL (Per barrel, ships bunkers)				
Gulf Coast	$1.50	$1.70	...	...
New York Harbor	1.80	1.85	...	...
Los Angeles Basin, 27 gravity	1.15	1.40	...	...
LUBRICATING OIL (Cents a gal.)				
Oklahoma Refineries:				
Bright Stock, 150-160 viscosity at 210°, 10-25 pour test	13½	15½	...	...
Neutral oil, pale No. 3 color, 150 viscosity at 100°, 0-10 pour test	8	10¼	...	...
Western Pennsylvania:				
Bright stock, 145-166 viscosity, at 210°, 25 pour test	12	13	...	...
Neutral Oil No. 3 color 150 viscosity, at 70°, 25 pour test	19	19	...	...

Organize California Refinery Marketing Agency

Formation of a marketing unit to handle the output of gasoline from seven independent refining companies in the Los Angeles area of Southern California has been effected. The plan provides for the sale of the output of each under a single-brand name through independent service stations.

Companies participating are McCallen Refining Company, Exeter Refining Company, Mercury Petroleum Company, Harbor Refining Company, Envoy Petroleum Company, El Camino Refining Company and Triangle Oil & Refining Company. The marketing organization is known as the Refinery Sales Company.

For several months unsettled conditions have prevailed in the Los Angeles gasoline marketing area. The new joint sales plan, as represented by Refinery Sales Company, is expected to contribute to more stabilized conditions in this area, as its activities will coordinate the selling effort of a considerable segment of the retail service station business in the territory.

Single Purchaser Cuts Pennsylvania-Grade 25 Cents

A reduction of 25 cents a barrel, to 1.75, for Bradford crude was announced last week by Bradford Oil Refining Company, currently running 1000 barrels a day through its 2500-barrel refinery. The Joseph Seep Purchasing Agency, Tide Water Associated Oil Company, and Valvoline Pipe Line Company late last week were still posting $2 per barrel for Bradford oil.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand in August	State Allowable in August	BARRELS DAILY FOR WEEK ENDED August 3	Aug. 10
TEXAS—				
Texas Panhandle	.....	.....	65,925	63,900
North Texas	.....	.....	84,600	89,900
West Central Texas	.....	.....	28,050	28,100
West Texas	.....	.....	181,950	191,900
East Central Texas	.....	.....	72,700	68,350
East Texas Field	.....	.....	374,725	374,900
South Texas	.....	.....	174,350	170,050
Texas Gulf Coast	.....	.....	184,975	188,100
Total Texas	1,326,400	1,167,054*	1,167,275	1,174,500
CALIFORNIA—				
Long Beach	.....	.....	42,200	43,800
Midway-Sunset	.....	.....	44,300	60,600
Kettleman Hills	.....	.....	44,500	45,100
Wilmington	.....	.....	83,200	83,800
Others	.....	.....	388,900	394,900
Total California	598,400	587,000†	603,100	628,200
OKLAHOMA—				
Oklahoma City	.....	.....	109,200	87,600
Seminole Area	.....	.....	106,500	94,500
Others	.....	.....	198,150	209,325
Total Oklahoma	402,600	390,000	413,850	391,425
ILLINOIS—				
Salem	.....	.....	177,200	177,500
Louden	.....	.....	72,900	74,500
Centralia	.....	.....	32,500	47,800
Other New Pools	.....	.....	89,700	93,400
Old Pools	.....	.....	10,250	10,300
Total Illinois	440,600	.....	382,550	403,500

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand in August	State Allowable in August	BARRELS DAILY FOR WEEK ENDED August 3	Aug. 10
LOUISIANA—				
North Louisiana	.....	59,857	65,900	65,200
South Louisiana	.....	214,763	216,800	216,175
Total Louisiana	276,100	274,620	282,700	281,375
KANSAS	166,800	170,607	183,150	169,150
NEW MEXICO	105,200	102,000	104,250	104,800
EASTERN STATES—				
Pennsylvania Grade	57,000	.....	69,300	70,650
Others, Eastern	35,900	.....	19,800	19,850
Total Eastern States	92,900	.....	89,100	90,500
MOUNTAIN STATES—				
Wyoming	81,300	.....	74,950	73,100
Montana	20,600	.....	18,850	18,800
Colorado	4,200	.....	3,650	3,600
Total Mountain States	106,100	.....	97,450	95,500
MICHIGAN	57,100	52,000§	53,800	54,100
ARKANSAS	65,200	73,000	72,300	72,350
INDIANA	10,000	.....	12,500	14,600
MISSISSIPPI	10,300	.....	11,450	11,800
NEBRASKA	.....	.....	250	200
‡Total 8 Prorated States	2,997,800	2,816,281	2,880,425	2,875,900
Total United States	3,657,700	.....	3,475,325	3,492,000

* Estimated daily average, considering general shutdowns on August 1, 4, 8, 11, 18, 25, 30, and tentative general shutdowns on August 12 and 22.
† Recommendation of Central Committee of California Oil Producers.
§ Department of Conservation estimate of actual production.
‡ Texas, California, Oklahoma, Louisiana, Kansas, Arkansas, Michigan, New Mexico.

WORLD-WIDE DEVELOPMENTS

By WM. V. GROSS, Associate Editor

Colombia

Six Workers Reported Killed in Indian Attack

A dispatch from Cucuta, Colombia, last week stated that Robert Wiesner, Colombian oil engineer, and five oil workers were killed by Motilones Indians in an attack in the Catatumbo jungle area.

Venezuela

Production Curbed With Loss of Export Market

Lack of storage and market are generally felt in Venezuelan oil circles to be reasons behind the decision of Standard Oil Company of Venezuela to hold daily production there down to 65,000 barrels. This decision, confirmed last week, is expected to result in curtailment of drilling and consequent reduction in personnel of the production and transportation branches of the company.

Other companies operating in Venezuela, including Mene Grande Oil Company; Caribbean Petroleum Company and its associate, Venezuelan Oil Concessions; Lago Petroleum Corporation, another Standard Oil Company of New Jersey subsidiary, and The Texas Company of Venezuela, are expected to follow suit.

World-wide conditions occasioned by the World War and its resultant paralysis of Venezuela's trade are responsible for the decision of Standard Oil Company of Venezuela. Incidentally, Venezuela's domestic consumption of petroleum products is small in comparison to her export trade to the other Americas and Europe. It was development of this export trade which caused Venezuela to crowd Russia during the past four years for second rank among the producers of the world.

Officials of the various Venezuela companies, particularly Henry S. Linam, head of the Standard interests, are said to be working in constant cooperation with the government officials in an endeavor to work out some scheme in connection with the proration of crude production in Venezuela that will not cause a disruption in the normal function of the national economy of that country.

Action of leading companies in Venezuela in reducing daily production also will have repercussions in the Dutch West Indies, location of the world's largest refineries which have been operating primarily on Venezuelan crude. One plant of Lago Oil and Transport Company, affiliate of Lago Petroleum Corporation at Aruba, has a daily capacity of 285,000 barrels when operating under normal conditions. This output can be stepped up to 300,000 barrels during periods of peak demand. The Shell Oil Company's refinery at Curacao has a rated capacity of 200,000 barrels daily.

War

Oil Storage Depots Are Targets for Bombing Raids

Oil storage depots and refineries have figured prominently as objects of British and Axis bombing attacks during the past week in Europe, Near East and Africa.

Britain's Royal Air force claims to have set afire the synthetic oil production plant at Sterkrade, in the Ruhr, by shattering tanks there with explosive bombs and then igniting the escaping oil with incendiary bombs. The English air fighters also claim to have scored hits on oil refineries and fuel centers at Emden, Hamburg, Misburg, Salzbergen and Emmerich. Thirty direct hits were claimed on the refinery at Salzbergen, an important source of Nazi benzine, kerosene, lubricating oils and gasoline.

In Africa, the English fliers claimed great damage to Italian oil storage depots in the Eritrean towns of Zula, Accico and Asmara.

Success of the previous week's bombing of oil depots at Cherbourg, Nantes and St. Nazaire by English planes was attested by the formal protest of the Vichy government against such action.

On the other side, Axis partners likewise claimed great damage to British oil supplies. The Italian Air Force reported successful bombing of oil supplies at Aden. German bombing included various towns in Northeast Scotland, the Midlands, Southeast England, and the Bristol Channel area.

So far as oil storage is concerned, both sides, as a general matter, refuse to acknowledge damage done by the enemy. On the propaganda basis, England seems to be getting the best of the argument. But it should be observed that the London dispatches give more detail concerning the outcome of raids into German held territory than the Berlin dispatches give about raids into English territory.

Seek to Discourage Soviet Designs on Rumania

Possible Soviet designs on the rich producing areas in Rumania, from which English and French are being ousted, might be discouraged by a Rumanian invitation to German and Italian technologists to take charge of the Rumanian fields. This was stated to be speculated upon in Rome last week while high Rumanian government officials visited with Count Ciano and Mussolini.

Bolivia

Pro-Nazi Campaign Urges Confiscation of Oil Properties

Expropriation of Standard Oil Company of Bolivia is being used as one of the issues to bolster a pro-Nazi and anti-United States propaganda campaign in Bolivia, according to Russell B. Porter, of Lima. Fifth column press agents cite the history and function of the company in Bolivia as an example of Yankee imperialism and capitalism's seeking to enslave that country of 3,000,000 population.

As a matter of record, government attorneys during the regime of President David Toro in 1937, when the oil properties were seized by the Bolivian government, never were able to establish to the satisfaction of unbiased jurists allegations made against the company, one of which was that the company supplied Argentina with oil by means of a secret pipe line and that it had to be forced to supply Bolivia with oil during the Chaco war.

Since Bolivian oil fields were taken over by the government, production has fallen to where it now supplies only 30 percent of the country's domestic needs, and Yacimientos Petroliferos Fiscales Boliviano, the government's organization for operating the oil industry, is accumulating a sizeable deficit. One move to try to put the Bolivian oil industry back on a paying basis was seen in the agreement between that government and Argentina, the oil industry of which is more than 50 percent nationalized, which provided for construction of a pipe line from Bolivia to Argentina. One condition of the pipe line agreement is said to have been a provision that the oil properties shall not be restored to private hands.

Dionisio Foianini, former minister of petroleum in La Paz and prominent in the early days of the movement having as part of its objective nationalization of the oil industry in Bolivia, is said to have made a deal with German interests in 1939 whereby Germany would furnish Bolivia with $1,000,000 worth of oil-field machinery in return for Bolivian tin. But the war prevented consummation of such a deal.

China

Vegetable Oil-Gasoline Plant Capacity May Be Increased

The Chinese government's plant for converting tung and other vegetable oils into gasoline, now turning out 420 gallons per day at Chungking, can be increased to 500 gallons per day on short notice.

The plant is said also to have a monthly yield of 1000 gallons of lubricating oil and 4000 pounds of grease.

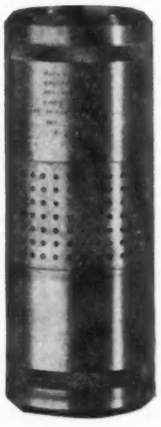
NIXON *Surface Control* GAS-LIFT SYSTEM

mechanically operated flow valve assures positive control!

These flow valves and their operation are the ultimate of simplicity. They are equipped with ball and seat valve inserts, with the ball projecting slightly on the inside. When the weight bar, suspended by wire line from a cylinder on the surface, is pulled into the valve it pushes the ball off the seat to permit the entry of gas, which brings the fluid to the surface.

The movement of the weight bar is controlled by the intermitter. At predetermined intervals it allows pressure to enter the cylinder and raise the weight bar into the valve. Release of pressure in the cylinder is accomplished by either of two methods. 1st, by action of the fluid on the intermitter when it reaches the surface; and 2nd, time control which is set to release pressure as soon as sufficient gas has entered the tubing to bring the fluid to the surface. Individual well characteristics determine the method to be used.

TIME CONTROL and MECHANICAL OPERATION are combined in the Nixon Surface Control Gas-Lift System to bring you savings in many ways. Talk to a Nixon Gas-Lift engineer and get acquainted with them. Write your nearest Wilson Supply Company store or sales office.



The Nixon Flow valve is NOT opened by pressure differentials; spring tension; gas or fluid volume. Any changes in timing the opening and closing of the flow valve are made by changing the notched timing wheel on the intermitter clock. This feature is especially valuable since it eliminates the necessity of pulling tubing to change valves, re-adjust spring tensions, or compensate pressure differentials.

WILSON SUPPLY CO.

1412 MAURY ST. HOUSTON, TEXAS

EXCLUSIVE GULF COAST DISTRIBUTORS FOR: Wilson-Snyder Pumps; American Cable Tru-Lay Pre-formed Wire Rope; Kewanee Boilers; Sievers Reamers; Drift Meter, Jr.; Gray Swivel; Nixon Surface Control Gas Lift; Nixon True-Taper Slip and Spider; Bowen Pack-Off and Releasing Drill Pipe Overshot; Douglas Weight Indicator; Coffey Robot Stack Draft.

OIL & GAS WELL SUPPLIES

COMPLETE LINE OF FISHING TOOLS AND SERVICE

BRANCH STORES:
TEXAS: Gladewater; Barbers Hill; Bay City; Monahans; Alice; Victoria; Corpus Christi.
LOUISIANA: Rodessa; Lake Charles; New Iberia; Gretna; Shreveport.
ARKANSAS: Magnolia.
SALES OFFICES: Tulsa, Okla.; Dallas, Texas.
LOS ANGELES: Phone W.L.A. 3-4040.

U. S. FIELD OPERATIONS

Oklahoma

Activity Surges in Cumberland Pool With 11 Tests Active

Pure Oil Company is pushing activity in the Cumberland pool, Marshall and Bryan counties, with 11 tests underway. Two of them flowed in for larger producers than the discovery, which rated 2851 barrels in 16½ hours on completion. Thomas 1 (102), SW NE NW 28-5s-7e, ¾ mile northwest of the discovery, flowed 352 barrels of 37.4-gravity oil in 55 minutes on a wide open test through casing with tubing closed. In 1 hour and 55 minutes, the well flowed 661 barrels, cutting 1 percent basic sediment. On cleaning out into pits, it flowed 115 barrels in 50 minutes. Total depth is 5091 feet in the Bromide sand. Open flow test will be taken when the well has cleaned itself out.

Stewart 1 (103), SW SE NE 28-5s-7e, across the Washita River in Bryan County, flowed 337 barrels in one hour through casing with tubing closed. On a 3-hour test, a flow of 895 barrels was gauged. Testing continued through various chokes, cleaning out at times into the pits. Casing pressure was 1025 pounds and tubing pressure 800 pounds. Pay was logged at 4890-5090 feet in the Bromide section. Crude tested 37.4-gravity, same as the discovery. Gas is estimated over 2,000,000 feet.

Little 1 (101) B, NE SW SE 28-5s-7e, Marshall County, ¼ mile southwest of the discovery, flowed 81 barrels in a 5-minute head. Operators were cleaning out and shutting off water. Total depth is 5093 feet in the Bromide sand. Pure Oil Company's Park College 1, SWc SE 27-5s-7e, a mile southeast of the discovery, is the deepest active test, drilling below 4600 feet and nearing the pay zone. It will determine scope of the structure in an easterly direction.

Cumberland will be developed on 20-acre spacing with wells in the northeast and southwest corner of each quarter. Ten locations have thus been proven. A solid block of over 22,000 acres is controlled by The Pure Oil Company surrounding the discovery well. The company is completing plans for a warehouse and office buildings in the Cumberland camp, in SE of 29-5s-7e, Marshall County.

New Zone for Chandler

Magnolia Petroleum Company found initial Oswego-lime production in the west extension area of Chandler pool, Lincoln County, at Ross 10, SE NE SE 2-14n-3e, which flowed 367 barrels in 20 hours after treating pay with 1000 gallons and perforating with 48 shots at 3955-91 feet. On a 21/64-inch choke, it flowed 280 barrels in 24 hours and 244 barrels on a 11/64-inch choke with 1,500,000 feet of gas. This well formerly made a 10-barrel producer in the Skinner sand at 4245 feet. Hole was plugged back to 4015 feet for the new test. Over 30 wells now producing from the sand zone are expected to be plugged back in later stages to the Oswego lime horizon.

J. F. Smith extended St. Louis pool, Pottawatomie County, 1½ miles to the northwest, opening some 5440 acres to exploration. Brown 1, NE SE NE 6-7n-4e, flowed 357 barrels through casing in 16 hours, without acid. Hunton lime was topped at 3957 feet and drilled to 3991 feet with 7-inch casing cemented on top of pay. It was shut in for a pipe-line connection. Structurally, the wildcat checked on par with major producers in the pool proper, second largest in the state. Upper formations logged included Belle City at 2135 feet, Hogshooter 2540 feet, Layton 2550 feet, Checkboard lime 2885 feet, Calvin 3575 feet, Earlsboro 3855 feet, Woodford 3950 feet, with a good show of oil in Hunton at 3957-63 feet.

Two wildcats in Caddo and Stephens counties had promising shows. The Texas Company's Smith 1, CNE NW 2-5n-12w, northwest of Apache, Caddo County, cored at 2598-2607½ feet in Viola lime and recovered 7 inches of hard tight lime with some free oil and bubbles of gas. Heavy gas pressure has been encountered in successive stages of drilling. Viola lime was topped at 2545 feet and drilled to 2556 feet two years ago, and the test then shut in. Pay softened at 2593-98 feet, and gas threatened to blow out at 2595 feet when operators loaded the hole with heavier fluid.

Gulf Oil Corporation, The Carter Oil Company et al's Qualls 1, CE½ SW NE 23-1n-7w, 3 miles northeast of Duncan and southwest of the Doyle area, Stephens County, showed two stands of oil on a drill-stem test in sand at 6052 feet, but was deepening below 6350 feet in Pennsylvanian.

In Kingfisher County, Phillips Petroleum Company's Grape 1, CNW SE 30-18n-5w, 8 miles west of Lovell pool, took drill-stem test at 7831 feet, in the second Wilcox sand. Log on this wildcat discloses the following tops: Layton 5600 feet, Oswego 6146 feet, Mississippi 6670 feet, Woodford 7205 feet, Sylvan 7335 feet, Viola 7425 feet, Dense 7485 feet, first Wilcox 7585-7604 feet, and second Wilcox sand at 7721 feet. No important shows were encountered while drilling.

Kansas

New Pools Opened in Stafford, Butler and Barton Counties

Stanolind Oil & Gas Company's Charles "A" 1, CN½ NE SE 15-24-12w, 5 miles east of St. John pool and 5½ miles west of Zenith pool, Stafford County, established a draw-down potential of 11,324 barrels daily and was allowed the state maximum of 3000 barrels to open Viola lime production. Pay, topped at 3815 feet, was perforated with 144 shots at 3815-50 feet. Hole immediately filled 3450 feet with 40.5-gravity oil. After acidizing with 3000 gallons, the wildcat flowed 105 barrels the first hour and 79 barrels the second hour through 2½-inch tubing. Hole was carried to 4028 feet in Arbuckle lime and plugged back to 3886 feet after both Simpson and Arbuckle failed to show. This strike borders the west side of the city of Stafford.

Between Young and Reynolds-Shaffer pools, Butler County, Vern McDaniel et al's Eckel 1, NW NE NW 7-27-7e, filled 700 feet with oil in 6 hours after penetrating Kansas City lime at 2184-89 feet. Five-inch casing was cemented at 2184 feet prior to testing the wildcat.

Connecting line between Burnett and Bemis pools, Ellis County, was evident as Champlin Refining Company's Hadley 1, CN½ NW NE 20-11-17w, ½ mile northwest of Bemis pool, filled 2600 feet with oil after drilling into Arbuckle lime at 3366-91 feet. Pay was acidized with 1000 gallons, and testing continued.

Northwest ¾ mile of Ellinwood West pool, Barton County, C. L. Carlock et al's Hammer 1, CNL NE NW 35-19-12w, acidized Arbuckle lime at 3367-70 feet with 1000 gallons to swab 7 barrels hourly for 13 hours. After re-acidizing with 2000 gallons, the wildcat increased to 8 barrels hourly on the swab to open a new Arbuckle-lime pool.

Zenith Extended

Republic Natural Gas Company extended Zenith pool, Stafford County, ¾-mile northeast at McNickle 1, CS½ SW NE 2-24-11w. On potential test, the well made 88 barrels from Misener sand at 3722 feet.

Aladdin Petroleum Corporation et al's test in CN½ NE SW 35-19-12w, west of the Wolf pool, Barton County, swabbed 6 barrels of oil per hour from acidized Arbuckle lime at 3371 feet. Testing continued.

A. G. Kaiser et al's Karst 1, CEL SE SW 11-16-14w, northwest of Susank pool, Barber County, filled 1000 feet with fluid, mostly oil, from Arbuckle lime at 3396 feet. Crude tested 37.2-gravity. In one hour, the wildcat made 15 bailers of oil with a small amount of water.

Wildcat Failures

Alva Billing et al's Vanek 1, SWc SE 25-14-10w, 10 miles north of Stoltenberg pool, Ellsworth County, topped Arbuckle lime at 3113 feet and filled with water when drilled to 3129 feet.

Cities Service Oil Company's Essick

1, NEc 25-16-8w, 6 miles northeast of Lorraine pool, Ellsworth County, failed to show in Arbuckle lime at 3445-3512 feet and was plugged.

Jack Robertson et al's Miller 1, CWL SW NE 4-16-14w, 4 miles west of Trapp pool, Barton County, filled wtih water from Arbuckle lime at 3428-33 feet. Imo Oil & Gas Company's Eveleigh 1-A, CEL SW NE 3-18-4w, 10 miles northwest of McPherson pool, was shut down for orders after filling with water. Arbuckle lime was logged at 3362-90 feet. Herndon Drilling Company et al's Montgomery 1, CEL SW 13-27-13w, east of Iuka pool, Pratt County, perforated Simpson sand with 12 shots at 4324-35 feet and 36 shots at 4335-46 feet after cementing 5-inch casing at 4445 feet. The wildcat bailed one-haif bailer of water per hour.

Southwest of Lost Springs pool, Marion County, Harrington & Loriaux et al's Belton 1, SEc NE 30-17-4e, swabbed 72 barrels per day with 450 barrels of water from Mississippi lime at 2412-15 feet, topped at 2398 feet and drilled to 2420 feet.

Broadwater, Inc., et al's Heaton 1, CE½ SE SE 28-17-1w, southeast of Roxbury pool, McPherson County, filled with water at 3027 feet, but was drilling below 3100 feet.

New Activity

Magnolia Petroleum Company started Schroeder 1, CNL NW NE 33-16-10w, ½ mile south of Stoltenberg pool, Ellsworth County. Southwest of production ¼ mile, Atlantic Refining Company and Gulf Oil Corporation were drilling Matosh 1, CN½ NE SE 34-16-10w.

Solar Oil Company set surface pipe at Schartz 2, CSL SW NE 18-16-11w, ½ mile from either Hoffman or Prusa West pools, Barton County. Derby Oil Company et al's Phelan 1, CN½ NE SE 2-17-10w, ⅜ mile from Stratman pool, Ellsworth County, was spudding.

W. M. McKnab has tools at Southwestern College 3, NW SW SE 11-32-4e, 1¾ miles northeast of State pool and 1½ miles west of production in the Winfield pool, Cowley County. Continental Oil Company was rigging up rotary tools at Breon 1, CEL SW SE 4-35-4e, between the Puden Oil pool and the Arkansas City gas pool.

Skelly Oil Company was drilling at Adamek 1, CW½ SW NW 5-16-10w, ½ mile north of Haska pool, Ellsworth County. Vernon Oil & Gas Company et al's Ney 1, CSL W½ NE 17-16-11w, ½ mile east of Prusa West, Barton County, spudded.

IPAA Holds October 16-18 As Convention Dates

The annual meeting of the Independent Petroleum Association of America will be held at Dallas, October 16-18, as scheduled, it was announced last week by C. E. Buchner, executive manager.

At a special meeting of the board of directors on July 25, a change in the dates was considered and referred to the executive officers.

"As nation-wide publicity had already been given to the scheduled dates, it was deemed inadvisable to make any change in dates," Buchner said.

Illinois

Trenton-Lime Test at Centralia Shows for Good Oil Well

July saw 251 new producing wells completed in 15 downstate counties, bringing the total of producers in the state's new fields to 6898. Of the new producers, Marion County had 58, Clinton 46, and Fayette 45.

Cleaning operations were being continued at Ames-Hicks' Brown 2, Centralia townsite test to the Trenton formation. In Section 12-1n-1w and originally drilled to 4067 feet, it was later drilled 80 feet farther into the Trenton, and operators said that saturation was encountered all the way in drilling the 80 additional feet. The test was shot with 80 quarts of nitro and will be given an acid treatment after cleaning operations have been completed.

A fifth producing horizon for Wabash County, the Aux Vases, was indicated as Frank Tatum and John Watkins reported a successful showing at their C. Alka 1, NE SW SW 34-1s-13w, with recovery of 100 feet of oil on a drill-stem test at 2545-64 feet. Casing has been set. The four other horizons from which oil is being produced in the county are the Tar Springs, Cypress, Hardinsburg and McClosky.

Two important Clinton County wells in the Hoffman area were being tested in different formations. Ed Knoloff 4, NE NW 11-1n-2w, was testing the Benoist at 1318 feet, and Ed Knoloff 5 was testing the Stein at 1205 feet. Both were drilled by Roy Benoist.

In the Irvington pool of Washington County, Shell Oil Company's W. E. Brown 4, NE NE SW 23-1s-1w, was being tested following swabbing of 80 barrels of oil in 14 hours from 1558 feet in the Benoist formation.

New Irvington Outlet

Sohio Corporation has announced completion of a new 8-mile pipe line to the Irvington pool. It is servicing 17 wells, transporting approximately 3360 barrels of oil daily.

In Wayne County, Rockhill Oil Company abandoned Twist C-7, wildcat in SW NW SE 33-2s-7e. It failed to reveal productive Devonian pay, and when plugged back to the Salem, it had salt water in considerable quantity.

A damper was thrown on activity in Hamilton County after Exchange Oil Company's Friel 1, NW NE SE 34-5s-6e, Benoist discovery, began making water. It swabbed 800 barrels of oil in 18 hours on original test, but water has now risen to 10 percent. The well was drilled into 26 feet of Benoist saturation at 2943 feet. Kingwood Oil Company's Morris 1, SW SW NE 34-5s-6e, 600 feet from the Friel well, was flowing from Benoist, making about 1 percent water. Morris 1, an original McClosky test, was plugged back to the Benoist following the successful completion of the Friel well in that higher formation.

A Marion County wildcat, Fred Osborn's Fred Ahlf 1, SW SE 25-2n-1w, near Junction City, was drilling at 615 feet after pipe had been run through an old coal mine.

The fifth well in South Jasper County to initial 1000 barrels or more daily was brought in by The Pure Oil Company in the West Liberty field. Rotramel 1, Section 8-5n-10e, came in flowing natural at the rate of 1100 barrels following a heavy acid treatment.

What is expected to be White County's biggest McClosky producer is the Ezra Chapman 1, 1½ miles east of Norris City in Indian Creek township, NE NE NW 26-6s-8e. It cleaned itself in 17 minutes after being brought in flowing at the rate of 100 barrels an hour during a brief test.

Robley & Garnier were reported to have recovered fine McClosky saturation at 2770 feet in their Glenn Milligan farm test near Lancaster, Wabash County, southeast of production in Lancaster.

Indiana

Cypress Sand Indicates New Field in Gibson County

A wildcat showing focused attention on a new area in Southeast Gibson and North Vanderburgh counties.

Northeast of Warrentown 1½ miles, Jackson Township, Gibson County, Illinois-Indiana Basin Corporation's Leo Boeglin 1, CE½ SE NW 10-4s-10w, drilled 4½ feet of Cypress saturation, and oil rose 100 feet in the hole in 3 hours. The test was shut down, waiting on orders. Starting at surface elevation of 438 feet, it topped Glen Dean at 1538 feet, Golconda at 1680 feet, and Cypress saturation at 1811 feet.

Among the new wildcat starts was J. W. Pearson, Tr.'s William Turkhorn 1, NE SW 6-4n-5w, Jackson County, 6 miles southeast of Tampico.

On the west side of the Griffin field, Gibson County, Continental Oil Company's Mumford Realty Company 1, NW NE NE 25-3s-14w, ½ mile south of production, tested non-commercial McClosky, plugged back and set casing to 34 feet of broken saturation in the Waltersburg sand, topped at 2084 feet.

In Vanderburgh County, Perry Township, Mitchell et al's George Steinkamp 2, NW SE NW 5-7s-11w, was preparing to test show in Mansfield sand. The wildcat, drilled with portable rig, set 5½-inch to 1012 feet.

In Luce Township, Spencer County, O. F. Kelly's Robert Miller 1, SE SE NW 2-8s-7w, was drilling at 1510 feet, expecting the Cunningham pay at about 1590 feet. Two shows, in the Jackson at 1178-90 feet, and in the Barlow at 1402-90 feet, hold promise of commercial production. The test is ½ mile southwest of Damron Brothers' Cora Niles 1, Barlow producer.

In the Rockport gas field of Spencer County, Kentucky Natural Gas Company and Bill Obins' Mary Goodman 1, NW NE NE 32-7s-6w, was abandoned through dry Palestine sand.

North of a dry hole, Staves Drilling Company, contractor, was preparing to spud Kentucky Natural Gas Company's Charles Yeager 2, NW NE NE 31-7s-6w.

In Daviess County, Reeve Township,

Newton Pipeline Company's Willis G. Brittain 1, NE NE SW 15-1n-5w, topped Devonian at 1900 feet and was drilling at 1911 feet with a show of gas reported at 1904 feet.

In Harrison Township, Daviess County, D. L. Norris and Newton Pipeline Company's John W. Connelly 1, SE NE 32-2n-6w, was acidized in the Devonian to complete as a gas well estimated at 1,000,000 feet daily.

In Harrison County, Buffington-Bee et al, located Hugh O. Byrn 1, NE SW NW 27-2s-4e, projected Devonian test.

In the South Griffin field of North Posey County, Ray Ryan's Keck 5, NW SW NW 34-3s-14w, was one of the heaviest producers ever completed in the field, initialing 35 barrels an hour from the Aux Vases at 2775 feet.

Kentucky

Rig Union County Wildcat; Glenville Has 300-Barrel Well

In Union County, about a mile and one-half northeast of Uniontown, Benedum & Trees spudded Clements 1, NW NW SW 14-P-20, projected Devonian wildcat. Basin Drilling Company, Owensboro, is contractor.

In the Glenville pool of Daviess County, Stewart & Snyder's Anna Ezell 1, Section 12-N-28, 2 miles northwest of Glenville, was a Jett-sand completion initialing 300 barrels a day after 140-quart shot. The test, a Sun Oil Company farmout, was bottomed at 1290 feet.

A northwest extension of the Utica pool of Daviess County, Walter Sargeant et al's C. R. Cox 1, was completed in McClosky at 1727 feet for an estimated 40 barrels a day.

In Breckinridge County, 4 miles east of Cloverport, C. V. Guthrie and O. D. Vickers' C. V. Robertson 1, Section 4-P-36, was abandoned at 750 feet.

In Hancock County, W. J. Flesher et al's Burk 4, in the Easton pool, was testing Jett sand with prospects of a producer at 330 feet.

In the Niagara pool of Henderson County, Niagara Oil & Gas Company was drilling at 200 feet in Knight 1.

In Webster County, 1½ miles south of Sebree, Iley Browning's Sellars 1, inactive for several months, drilled about 12 feet of saturation in the Cunningham sand and was deepening below 1300 feet toward the McClosky. The test is just east of a McClosky producer. Without shooting, the Cunningham is reported to have showed for a 5- to 6-barrel well. About 3000 feet west, Tombs & Smith were rigging up J. R. Ramsey 1.

Shreveport and Lisbon Purchases

Standard Oil Company of Louisiana is now buying practically the entire allowable from the Shreveport oil field, Caddo Parish, amounting to 4300 barrels. Gulf Refining Company is taking the 4000 barrels allowed at Lisbon, Claiborne Parish, where DeSoto Crude Oil Purchasing Company recently withdrew as a purchaser.

Michigan

Tests Indicate Two New Basin Oil Areas

With the first important basin play this year well underway in Adams Township, Arenac County, two other basin areas were brought into prominence last week.

Chief interest centered on Sun Oil Company's McKenna 1, CS½ SW SE 15-19n-3w, Clare County, which on bailer test showed 1800 feet of fluid overnight from Dundee dolomite at 3751 feet. It topped Dundee at 3748 feet, but 5-inch casing was left on the rack due to the fact that previous tests in the general area had not carried shows above depths of 30 or 40 feet in the lime. Further delay in testing may be caused by the necessity of taking precautions against pollution by oil or brine of the Cedar River, a famous trout stream. Derrick sets within 200 feet of the river bank. Operators will build a dyke around the location and board up the rig before running casing.

If McKenna 1 makes a commercial well, it will be the company's second basin discovery this year in Michigan. Sun Oil Company not only tops all other companies for its spread of acreage in Michigan, but it also has been the most active of all in wildcatting. It has, with one exception, everything leased solid within a radius of two miles of the test. Gulf Refining Company has 160 acres in Section 10-19n-3w, the single exception to a solid block.

The other new basin development is Weber Oil Company's State 1, Section 25-24n-1e, Ogemaw County, which over a 5-day test period swabbed an average of 4 barrels a day from Detroit River dolomite at 3921 feet. It probably will be acidized. This same zone, about 1000 feet below the top of the Dundee and at the base of the Monroe salt section, is being produced commercially in Tuscola County, and has showed in several scattered northeastern Michigan wells.

Two tests were drilling, 4 were rigging up and 5 locations were staked in Adams Township, Arenac County, where Rayburn & Majors' Yenior 1, Section 22-19n-3e, opened a basin play three weeks ago with a 2400-barrel potential Dundee oil well at 2879 feet. It was still flowing 66 barrels per hour against about a 25 percent choke last week.

C. W. Teater, opener of the Porter pool in 1933, negotiated a deal with Dr. Howard Barker, of Pontiac, for 240 acres of leases, one a 40-acre offset to the east, on a 40 percent over-riding royalty deal. Barker's acreage was the most sought-after spread in the play, with offers made up to $76,000 in cash and a sliding scale over-ride to 3/16. Teater staked three locations.

Adams is the first basin play in history where rotary has been employed to any degree. Of the first 9 contracts let, 7 call for rotary drilling.

Markle & Teater's Johnston 1, Section 8-17n-14e, Huron County wildcat, which showed a Monroe-lime pay at 2652 feet last month but cut some water after acid, was shut down for orders last week after being deepened to 2950 feet into a water zone. At the original test point, it swabbed up to 20 barrels a day.

Twin Drilling Company probably will junk Methner 1, Section 33-16n-3w, a mile south extension attempt for the Wise pool. Rotary was moved out at 3768 feet, 128 feet in the Dundee, with the well making 4 bailers of water per hour. A light saturation zone was tested at 3730 feet.

Continental Oil Corporation, which recently took up its first acreage spread in Michigan, about 100,000 acres in the southcentral part of the state, has a portable core drilling machine working the spread.

Forest City Basin

New Gas Area Opened in Caldwell County, Missouri

Skelly Oil Company completed a gas well in Caldwell County, Missouri, 10 miles east of the Lathrop gas pool to open a new area. Formerly operated by O. M. Evans, Tulsa, Arnote 1, SW NE SW 25-55n-29w, was completed for 4,500,000 feet of gas from 410 feet.

Skelly Oil Company spudded its first venture in the Nebraska sector at Davisson 1, SW NW NE 20-1n-16e, a west offset to the Sibbernsen producer in the Falls City pool, Richardson County. Lee Drilling Company, Tulsa, has contract for a Hunton-lime test.

Rotary rig was being assembled by R. L. Campbell to drill Schock 1, SW SE NE 20-1n-16e, also in the Falls City pool. M. J. Lewis et al's Wittwer 1, NWc NE 22-1n-14e, had rotary tools on location.

Another dry hole was reported in the area as E. J. Shaffer and Fred Rust et al's Boose 2, CSE NE 16-1n-16e, topped Hunton lime at 2395 feet and cores to 2393 feet failed to reveal a show. Hole was being plugged.

In Northeastern Kansas, Bill Corbett et al's Security 1, CSL NW 28-11s-15e, two miles west of Topeka, Shawnee County, had hole bottomed at 2170 feet with a good show of oil in cuttings in the Devonian. Hunton lime was logged at 2115-66 feet. Five-inch was set at 2119 feet to test through a hole full of water. Dan McLaughlin et al's Darks 2, SE NE 5-10s-20e, Jefferson County, was drilling below 935 feet, and the same operators' Bowers 1, CSE NE 5-10s-20e, McLaughlin pool, was drilling below 250 feet.

In Nemaha County, Nebraska, Bow & Arrow Oil Company moved in machine at Shrieffer 1, CS½ NE SW 20-4n-14e. Forest City Basin Syndicate et al's Windle-Dodge 1, SE NE SE 3-1n-15e, was shut down at 1615 feet.

Ettington et al's Clark 1-A, NEc SE 8-63n-14w, northwest of Kirksville, Adair County, Missouri, was abandoned in Arbuckle lime at 1216-47 feet.

Brin & Nathan's Decker 1, CNW NW 1-61n-38w, Holt County, Missouri, developed a casing leak at 1952 feet with hole bottomed at 2310 feet.

West Texas

Andrews Wildcat Expected to Bring New Development

The Southeastern Andrews County wildcat of Texas Pacific Coal & Oil Company and Seaboard Oil Company on the Midland Farms Company Fee, SE NE NW T&P Section 1, Block 40, T-1-N, resumed making small volume of oil with water after plugging back from sulphur water in porous lime at 4873-88 feet to 4865 feet. The performance of the well will possibly pave the way for eventual development of a new pool east of the general production trend in the Permian Basin. Swabbing operations were underway late last week, averaging 8 barrels water and 10 gallons of oil hourly. Tubing was landed on bottom with perforations below packer at 4815 feet, as the hole is open below 9⅝-inch casing, cemented at 2965 feet. Considerable drilling fluid was absorbed by the formation since first saturation was cored at 4850 feet on July 29, and several days swabbing may be necessary to recover same. The well is 15 miles northeast of the North Cowden field, nearest production, and 12 miles from other Permian tests.

The partnership obtained two sections for drilling the wildcat, and contracted to drill a second test, if the first produces, on a 4-section lease that adjoins to the north, west and south, and pay $25 per acre out of oil. Midland Farms Company owns all acreage in the area, excepting a ranch held in fee by John Mabee, Tulsa oil producer.

Stanolind Oil & Gas Company's Midland Farms Company 1-C, 1¼ miles east of production in the North Cowden field and due to drill to the 5500-foot depth, or the Clear Fork lime, was drilling at 3710 feet. Top of Yates frosted grains was logged at 3150 feet, or 116 feet below sea level, being 102 feet lower than Midland Farms Company 1-A, nearest producer. The company has been adding to its lease protection on the east flank of the field over a period of months. Latest acquisition involves lease on W½ Section 44, which carries a drilling obligation; NW¼ Section 45, Block 2, T-1-N; and that part of the W. L. Callahan Survey adjoining the two tracts on the west. In addition to the test, the lessee contracted to pay $150 per acre out of one-eighth of the production.

Crockett County Test Controlled

M. & M. Drilling Company's Bouscaren 1, 1 mile north of the Soma shallow oil and gas pool, Western Crockett County, remained shut in after killing an estimated flow of 50,000,000 feet of dry gas, using 7½ tons of mud. The well blew out while drilling with tools at 1512 feet, with an elevation of 2871 feet, and was out of control 6 days. It occupies the highest structural position of the 4 producers, having logged top of Yates at 1371 feet, although originally reported at 1367 feet. Bouscaren 1 will likely remain inactive to await the outcome of J. K. Hughes Oil Company's Shannon 1, 1½ miles north by east, drilling below 500 feet. Henry Schooler et al's Shannon 1, ⅓ mile southwest of the discovery, showed little gas after 560-quart nitro shot at 1400-1530 feet, but failed to respond to second shot of 260 quarts at 1215-80 feet. It has plugged back to 1050 feet for another shot and is credited with having logged top of Yates at 835 feet, with an elevation of 2351 feet.

Plymouth Oil Company's Levy 1, northwestern Pecos County wildcat, was drilling hard chert at 6295 feet. It is credited with having logged base of the Permian near 6100 feet, with an elevation of 2473 feet. Gulf Oil Corporation's Wristen 5, Ward County Ordovician test and the deepest underway in the district, was coring at 9007 feet, presumably in Ellenburger dolomite. It will not be carried any appreciable distance below the present level.

Ward-Pecos Petroleum Corporation's Pecos Valley 6-D-E, E¼ of S¼ H&TC Section 36, Block 3, which recently uncovered deeper oil zone for the southwest portion of the Pecos Valley field, Pecos County, is to run string of 5½-inch pipe to exclude flowing sulphur water at 2040-43 feet, with the new oil pay at 2043-49 feet. The well produced between 75 and 150 barrels of 25-gravity oil and about 4 times as much water after flowing into surface pits for a week. Top of Yates was called at 1424 feet, with an elevation of 2432 feet. It showed for a small oil well after two nitro shots in the regular 1600-foot sandy-lime, and the hole was deepened with machine.

Magnolia Petroleum Company is starting operations on F. L. Woodley 1, SEc Subdivision 6 and League 57, Oldham County School Lands, 1⅓ miles north of production on the east side of the Duggan field. The company's Mallett 1-C, 5¾ miles due south and offsetting flowing production developed recently by an outpost, has set surface pipe. In the Slaughter portion of the district, the company's Mallett 1-B earned a potential rating of 751 barrels on ½-inch choke after acidizing broken pay at 4985-5044 feet. North portion of the Slaughter field is in line for considerable additional development, with Whittington Bros. et al's Alewine 1, NWc Labor 12, League 41, trying for an extension in drilling at 4250 feet. The latter logged top of Yates at 2768 feet, brown lime at 3730 feet, and first solid lime at 4070 feet, with an elevation of 3571 feet. If this test makes a producer, rig will be moved to SEc Labor 6, League 42, to fulfill a second drilling obligation. Awoeb Oil Company (Bond and Harrison) purchased lease on E½ Labor 29, League 39, paying $50 per acre cash and $150 per acre out of one-fourth of seven-eighths of the production. Harvey Drilling Company is negotiating for acreage held by George Etz et al on the north end of production, with possibly a 10-well drilling program.

Sloan & Zook Company and Tom Sloan's Waples-Platter 1, ¾ mile northeast of the Waples-Platter pool, Yoakum County, was drilling at 4960 feet, with 7-inch pipe at 4827 feet. This well is about level with the discovery, having logged top of brown lime at 4340 feet and solid lime at 4730 feet with an elevation of 3553 feet.

North Texas

Demand for High-Gravity Crude to Spur Development

Restoration of the market demand for North Texas high-gravity crude to a sound basis through the entry of a new major purchaser and expanded nominations by other buyers will be followed by a substantial gain in drilling activity. The market situation began clarifying late in July, and the majority of the purchasers have representatives canvassing the fields served by their respective lines for well connections. The deep areas, particularly K-M-A and Hull-Silk, will register an increased volume of drilling. Comparatively new deep discoveries in Clay and Montague counties already account for considerable drilling.

Walter Gant et al's Will Laird 1, Southwestern Montague County wildcat and a key test for geological information on the Fort Worth Syncline, was drilling black shale at 6044 feet, having logged an unusually thick section of conglomerate, carrying oil saturation at intervals, in Bend, topped at at 5690 feet. This wildcat may be carried to the Ordovician before running pipe for production tests in the Bend. Favorable oil saturation was also passed up in the Strawn below 4857 feet. No water was reported below the latter depth. W. H. Peckham et al's Lawson 1, Western Montague County wildcat, between Stoneburg and Belcherville, halted operations in lime at 6117 feet, having encountered salt water on drill-stem test at 6049-84 feet in Bend, toppd at 5840 feet. Larry Hults and Owens' Lee Tucker 1, 6½ miles west by north of Bowie, logged Palo Pinto lime at 2462-2785 feet, and was drilling at 2900 feet.

Fain-McGaha Oil Corporation's Spring 1, northwest offset to the Ringgold pool discovery, logged additional pay in deepening from 5702 to 5718 feet with tools. Hole filled with oil, and steady flow is expected when the hole is equipped with tubing. Gulf Oil Corporation's Worsham-Spring 1, southwest offset to the discovery, flowed 170 barrels of 47-gravity oil in 4 hours on official potential gauge from conglomerate at 5684-5701 feet in Bend, topped at 5643 feet, and Worsham-Spring 2 has landed surface pipe.

W. B. Omohundro et al's Seay 2, northwest corner of the discovery tract, logged top of Bend at 5626 feet, and cemented 7-inch at 5640 feet with the hole bottomed at 5680 feet. Conglomerate at 5662-75 feet carried oil saturation. The latter have started operations on Seay 3, south offset to the original well. British-American Oil Pro-

ducing Company's Martin 2 was drilling at 5270 feet.

Exploration of the Ellenburger horizon is being made by Sinclair Prairie Oil Company's Doty 1, one of the three Bonita pool tests that failed to produce in either of the Bend oil zones. Doty 2 was drilling sand zone at 6595 feet in Ellenburger, topped at 5863 feet, and may be carried to the underlying Cambrian. The comparatively few North Texas areas that produce from the Ellenburger invariably have a thin pay that is confined to the upper section. The above company has rigged up on two of its three recent authorizations. Magnolia Petroleum Company is drilling an east outpost, while E. C. Norwood et al's Norwood 1, northeast outpost, has spudded.

Sinclair Prairie Oil Company's McGeorge 15, east offset to the discovery completion for the 4100-foot Upper Strawn oil level on the south end of the Walnut Bend field, indicated production when an incomplete drill-stem test was made at 4113-22 feet. Packer failed within two minutes after tool was opened, but the recovery was 580 feet of oil and gas-cut drilling fluid. Pipe may be run for a production test. The Ramsey and Best sands in the Lower Strawn are the main sources of production for the area.

Horton and Pete Wiggins' Howard 1, western Clay County wildcat on a strike between the Halsell and Burns-Browning pools, proved dry in the regular Strawn horizons, and was drilling sandy shale at 5330 feet, with the Bend as the next objective. Phillips Petroleum Company contracted to buy half interest in the test and drilling block last April. The latter has made location for Hapgood 1, a west offset to E. C. Norwood et al's recent discovery completion for the Hapgood pool, eastern Clay County.

Southern Archer County has two active deep prospects that are nearing contract depths. Paul Steed and Ernest Wilson's Prideaux 1, southeast portion of county, tested salt water at 3422-39 feet, and was drilling at 3880 feet. Six feet of sand carrying oil saturation was topped at 3855 feet. In the Swastika shallow pool, C. W. Clark et al's Goldsmith 1 was drilling at 4980 feet on a 5000-foot depth contract.

Fig Ridge Hearing

A hearing has been scheduled by the Texas Railroad Commission for Auguest 12 to determine proper operating rules for the new Fig Ridge field, Chambers County. The area is around a Sun Oil Company wildcat test located in Section 82, T. & N. O. Railway Survey.

Texas Permits

The Texas Railroad Commission last week approved permits for drilling 145 more wells in Texas, 51 less than were authorized the week before.

One permit was granted in the East Texas field, in Gregg County, while 3 locations were reported from the remaining section of the East Central Texas area.

Southwest Texas led the state with 46 permits, while Gulf Coast operators listed 15. The commission approved drilling of 25 wells in West Texas and 21 in West Central Texas.

From the North Texas district, 23 locations were reported, and operators in the Panhandle were permitted to drill 11 additional wells.

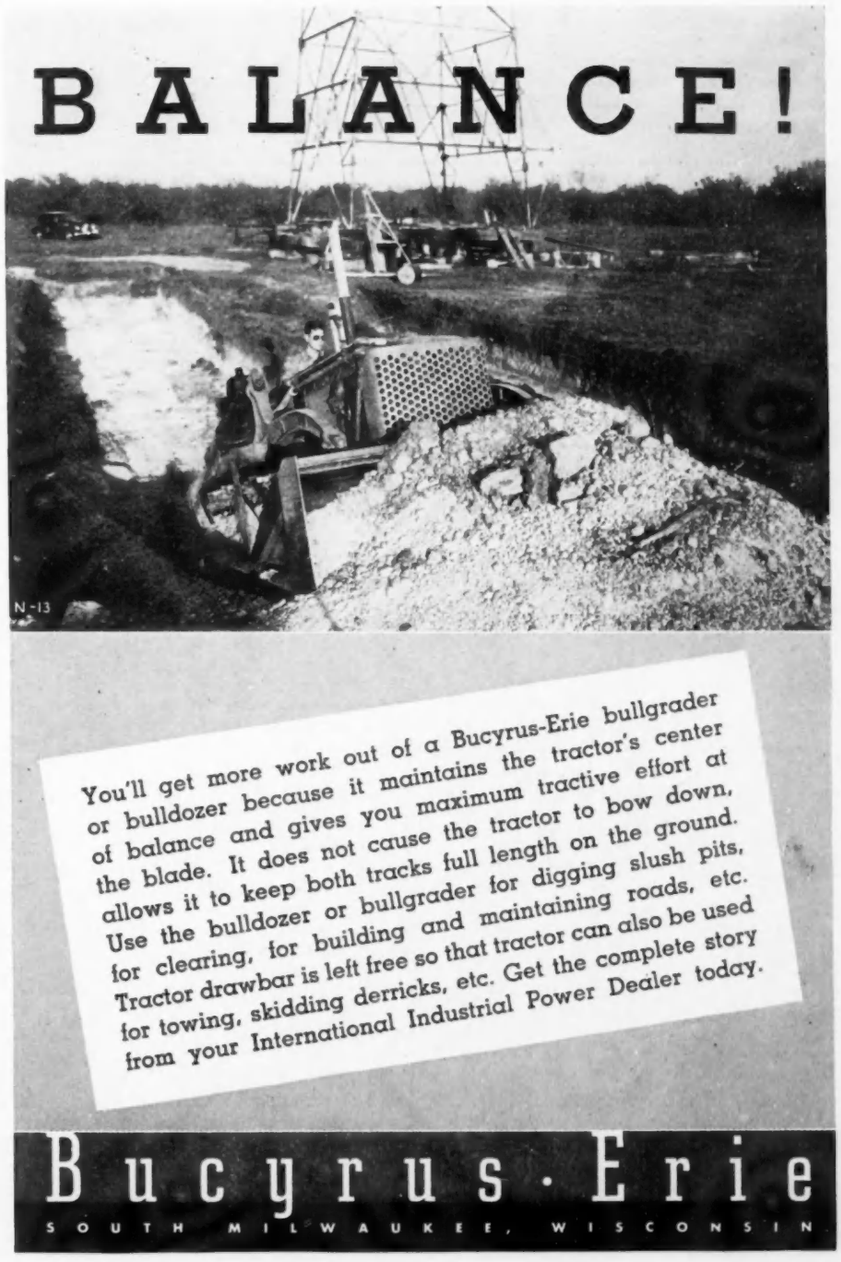
Seek Change in Rules for Dune Field, Crane County

Distribution of production on the basis of 75 percent acreage and 25 percent average unit potential was requested by operators at a hearing on the Dune field, Crane County, held by the Texas Railroad Commission last week. The method of allocation now provides for 50 percent on acreage and 50 percent on average unit potential. There are 20 producing wells in the field.

The new plan was advanced by Wasomes Oil Company, and was opposed by Magnolia Petroleum Company and Great Western Producers.

Stribling Field Well Sets County Depth Record

A new producing depth record for Stephens County, Texas, was recorded by A. A. Horwitz and Wm. P. Oldom's E. S. Maury 4, inside location for the Stribling pool, with an initial flow of 280 barrels of oil in 13 hours after using 5000 gallons of acid in the Mississippian lime through 150 casing perforations at 4446-76 feet. It is believed to be the first Mississippian producer for the county, although this formation has contributed a few prolific wells in Southern Young County. Maury 4 failed to make a commercial producer from the regular 3500-foot Caddo lime, and was carried to 4713 feet before landing 5-inch pipe at 4700 feet to test Mississippian pay at 4512-60 feet and 4570-4600 feet.


BALANCE!
N-13
You'll get more work out of a Bucyrus-Erie bullgrader or bulldozer because it maintains the tractor's center of balance and gives you maximum tractive effort at the blade. It does not cause the tractor to bow down, allows it to keep both tracks full length on the ground. Use the bulldozer or bullgrader for digging slush pits, for clearing, for building and maintaining roads, etc. Tractor drawbar is left free so that tractor can also be used for towing, skidding derricks, etc. Get the complete story from your International Industrial Power Dealer today.
Bucyrus·Erie
SOUTH MILWAUKEE, WISCONSIN

East Texas

Camp County Discovery Yields 70 Barrels Daily During Week

Production performance of Harry Moss and Delta Drilling Company's Joe Venters 1, Camp County wildcat that has been undergoing test since July 27, remained constant last week after increasing its flow to an average of 74 barrels of 41-42-gravity oil daily. Flow ranged from 70.87 to 76.12 barrels daily through ¼-inch tubing choke, with 185 pounds casing pressure and 100 pounds tubing pressure. Production is from 120 perforations opposite lower saturation in reddish sand, probably Travis Peak, at 8000-4[illegible] feet. Owners may defer making additional casing perforations at the present level, or perforate opposite upper saturation at 7947-75 feet, until arrangements are made to market the production. A short line to a nearby railroad is under consideration.

Several lease owners within the discovery block contemplate drilling, but no work will be undertaken until field rules are issued by the Texas Railroad Commission. Lease owners will petition the commission for 40-acre spacing when hearing is held at Austin, August 15. However, permits for 4 tests in the general area have been issued for small tracts.

J. S. Harrold et al's Armstrong 1, Rusk County wildcat 3 miles southeast of Henderson, is credited with having entered the Travis Peak sand at 7366 feet, and was drilling at 7410 feet on a 7500-foot depth contract. Top of Pettit was called between 7140-50 feet, with an elevation of 483 feet.

S. J. Taylor, F. K. Lytle and J. G. Phillips' Reid 1, on the northwest edge of the Mexia field, was drilling hard red sand with shale streaks at 5985 feet. It is probably in the Travis Peak series.

Arkansas Fuel Oil Company's Utley 1, Freestone County wildcat, 4 miles north of Fairfield, tested salt water in upper Woodbine at 4002-22 feet, and was due to abandon on reaching the 4500-foot level.

Southwest Texas

Nueces County Well Flows 150 Barrels to Open New Field

One new field was opened and several wildcats were being completed in efforts to establish new producing areas in South Texas Gulf Coast as the week closed. Several new producing levels were being established in present fields.

Fred W. Shield's J. O. Moore Estate 1, SE Survey 143, Nueces County, 3 miles southwest of Baldwin production, showed a sand section at 6603-57 feet on side-wall samples, and casing was landed at 6774 feet, bottom of the hole. Perforations were made at 6622-26 feet, and the well flowed 152 barrels of 44.3-gravity oil per day, with no water and a low gas/oil ratio, through ⅛-inch choke under 925 pounds tubing and 1050 pounds casing pressures. It opened the Shield pool.

In the same county, Henderson Coquat's T. H. Isensee 1, Lot 10, Pauls Subdivision "D," 2 miles east of Robstown, was testing a sand around 5950 feet. It had been drilled to 6508 feet by Texas Conservative Oil Company and taken over by the present operator. Hole was carried to 7505 feet and plugged back for a series of tests. Sand section topped around 5950 feet showed producing possibilities. A test on this zone at 5975-81 feet, while hole was being drilled, showed salt water. Liner had been set around 6000 feet and perforations made above the salt water test. A producer would open a new field or provide a major extension to the present Robstown production.

Humble Oil & Refining Company was ready to complete a 7000-foot southwest extension to East Flour Bluff field, Nueces County, with Duncan 1, Lot 20, Block 54. Coring the field sand at 6787-94 and 6798-6800 feet, it was drilled to 6900 feet and was awaiting orders to complete.

H. R. Smith, Inc.'s Charley Theil 1, Block 25, GCF & T Company subdision, Reynolds Survey, 3 miles southwest of the Wade City field in Jim Wells County, perforated the McNeill sand and was completing to open a new field in the Vicksburg. The test cored the Pundt sand at 4813-17 feet, which carried salt water, and the McNeill sand at 4924-34 feet. Casing was landed on bottom at 4945 feet. It was drilled on a farmout of The Texas Company.

Magnolia Petroleum Company's potential discovery of a new sand section in the West Ranch field of Jackson County did not turn out so well. After finding the zone between 6120-77 feet, casing was landed on bottom at 6177 feet and perforations made at 6170-74 feet. It headed oil and wash water several hours, then went dead. Work continued and the test began flowing by heads. At last report it was making 3 to 4 barrels of fluid per hour of which 84 percent was oil and the remainder water and basic sediment. The well is the company's West 98-A, near the northwest edge of the pool.

New Sand for West Ranch

In the same field, but on the southwestern end, Seaport Oil & Gas Company's Stepan 1, Block 33, found a new sand at 5587-96 feet, and drilled ahead to core the regular deep pay at 5758-66 feet. Casing was set at 5767 feet, and perforations were being made for a completion.

Humble Oil & Refining Company's Nave 1, 5 miles southwest of Bloomington and east of McFaddin field production, Victoria County, cored a Frio sand at 5615-21 feet, and on a poor drill-stem test recovered a small amount of oil and gas-cut mud. A new test was being run. Successful completion likely would open a new field, rather than provide an extension to one of the present pools.

Colton & Colton were completing their discovery of the Terrell field, Victoria County, on pump. The well, in the Sideck Survey, perforated sand at 5275-85 feet and was testing. It first made a small well at this level, was deepened to 5610 feet, then plugged back.

Plummer Oil Company's Terrell 4, in the Coletto Creek field, was reported still testing in a sand section around 6566-95 feet, in the Jackson zone. If a producer, it will open a new and deeper zone for the Victoria County area.

A shallow oil field 5½ miles south of Adams gas production in Medina County loomed with a production test under way in Burt C. Calvin et al's E. B. Chandler 1, J. Huff Survey. The test found a Navarro sand at 1054-62 feet, casing was set to the pay. Plugs had been drilled and tubing run preparatory to swabbing in.

Three Duval County Wildcats Show Salt Water on Tests

Salt water brought discouragement to three wildcat operations which had given promise of opening new pools in Duval County. A fourth operation was testing in an effort to open crude production a mile south of the Hoffman field.

Continental Oil Company's Driscoll 1-V, Section 481, 1¾ miles east of the Driscoll field, plugged back from 4515 feet in the Yegua to perforate at 3880-90 feet. Swabbing resulted in salt water, and the holes were squeezed. New perforations were to be made in the same zone.

Henderson Coquat et al's H. A. Hamilton 1, Section 125, 8 miles northwest of Benavides, cored a sand either in the basal Frio or Vicksburg zone at 2783-89 feet. Salt water resulted, and the hole was being drilled to 4500 feet, or the Pettus.

M. L. Massingill and Skipper Keller's W. R. Peters 1, Section 162, 2 miles west of the Rancho Solo field, cored top of the Cole at 1752 feet. A sand, found at 1813-26 feet, on drill-stem test yielded salt water. It was deepening to 2700-foot contract depth, the Mirando.

A mile south extension to the Hoffman field may result from Gilcrease Oil Company's Salizar 1, Section 3, which has been perforated at 2623-24 feet in the lower part of the Government Wells zone. The section was topped at 2602 feet and the hole carried to 2800 feet. Pipe was landed at 2660 feet.

Starr County Test Has Five Possible Oil Zones

A new Rio Grande Valley producing area was indicated with reworking of Complete Oil Well Service, Inc.'s M. F. Yzaguirre 1, Survey 227, Starr County. A Sun Oil Company farmout 2 miles east of Rincon field, it flowed gas and distillate through ⅛-inch choke under 1750 pounds tubing and 1925 pounds casing pressure from perforations at 4896-4904 feet. It was to be plugged back and retested at upper levels. Five zones indicated producing possibilities. Sun Oil Company, W. R. Davis & Company, Transwestern Oil Company

and Complete Oil Well Service hold leases in the vicinity.

Borsodi Petroleum Company's Vela 1, Share 2-A, Porcion 92, a mile south of the Boyle field, found the discovery sand at 3526-38 feet with oil and gas showing, but deepened. Salt water was found at 3735-59 feet, and hole was being made below 4100 feet at last report. It also is a Sun Oil Company farmout.

Order Retests for Slaughter Field

Potential retests on all wells in the Slaughter field, Hockley and Cochran counties, have been ordered by the Texas Railroad Commission. The tests must be completed by September 20, 1940, and will form the basis of proration allocations in an order to become effective October 1.

The commission revised its potential rule for the field, so that tests may be witnessed by any other operators in the field, a plan similar to that now in effect in the Wasson field.

The program calls for open flow 24-hour tests, with the last 6 hours counted and the 24-hour potential computed by multiplying the last 6-hour test result by 4. The well must be flowed into the same tank or battery during the test period.

Camp County Hearing

A hearing has been scheduled by the Texas Railroad Commission for August 15 at Austin to consider operating rules for the area around the H. S. Moss Venters 1, newly completed producer in Camp County.

Texas Gulf Coast

Lissie Prospect Converted to Gas Area; Yield From Yegua

Lissie Prospect, northern Wharton County, was made a gas field as Salt Dome Oil Corporation completed Poole 1 as a dry gas well in Yegua at 6728-34 feet. Drill-stem test of this zone yielded only gas blows until the 1000-foot water cushion was removed, when a strong ungauged flow of gas under 1600 pounds pressure was obtained. Operators contemplate no other locations at present, the field being unfavorably situated for a commercial outlet.

Poole 1 was drilled into salt water by Strake Petroleum Corporation at 10,116 feet, plugged to 9925 feet, and perforated at 9939-56 feet for a test which recovered gas and oil. This zone produced by heads but drowned. Tests at 9927-50 feet and 9860-90 feet showed gas, oil and salt water. The prospect, found in 1934 by Sun Oil Company with torsion balance, is the site of five tests, one of which, Strake Petroleum Corporation's Strunk 1, cored oil sands at 6742 and 6918 feet. Salt Dome Oil Corporation took over the abandoned Poole well to test shows in Yegua and Cook Mountain between 6200 and 7200 feet. In view of the showings in Strunk 1 and Poole 1, another test is to be expected soon.

Woodley 17, Humble Oil & Refining Company Wilcox test in the Racoon Bend field, Austin County, blew out from Saline Bayou at 7042 feet while pulling drill stem. The well was killed with mud, and reaming was continued. Electric log was run to near 6800 feet, with results not available. The company's Hardy 7, Wilcox test on the north flank, was drilling. At Red Fish Reef, Galveston Bay location, the company prepared to perforate State 1-A-247 at 9060-63 feet after delay due to storm and tubing cemented in hole.

In Galveston County, Continental Oil Company staked Davis 1, wildcat in the M. Muldoon Survey, 2½ miles north of League City, on the Kemah prospect found in 1937 by Stanolind Oil & Gas Company with reflection seismograph and torsion balance. Location is a mile northwest of Tri-State Oil Company's Davis 1, a dry hole. Two failures have been drilled on this structure, which Gulf Oil Corporation's geophysical work did not confirm. Continental Oil Company has a 4000-acre block acquired on geophysical option, centering the Muldoon Survey, with selection made at $10 to $50 per acre, and a 5700-acre block centering at League City, for which it paid as high as $150 per acre.

Hall Jordan Oil Company, Oklahoma City, staked State 1-72 on the Gulf of Mexico prospect, 2 miles off the Jeffer-

PETROLEUM DICTIONARY

By

HOLLIS P. PORTER

A Registered Engineer

This work grew out of a demand for some source of definition for the terms used by the petroleum industry. It contains over 3,000 definitions of words used constantly by all phases of the petroleum industry. It was published in 1936, and has found its way into engineering departments, legal departments and land departments of producing concerns, as well as to the desks of executives of the petroleum industry.

Manufacturers also find it valuable for reference. Advertising agencies find it a valuable addition to the library.

253 Pages, 6x9, cloth bound, Price Postpaid, $3.00

SEND ORDERS TO

THE GULF PUBLISHING COMPANY

P. O. BOX 2811 HOUSTON, TEXAS

"PATTERSON-BALLAGH STABILIZERS REDUCE VIBRATION 75%"

—declares Taft Operator

"The Kelly whipped all over the rig before we put on Patterson-Ballagh Stabilizers. I have never seen such a difference in drilling. Frankly, I didn't believe what the salesman said they would do—but they sure do the trick."

When you reduce vibration you definitely reduce drilling costs. The worst vibration is down in the hole where you can't "see" it. Patterson-Ballagh Stabilizers dampen this destructive force. Use them and SAVE. See Composite Catalog.

Patterson-Ballagh Corporation

Los Angeles
Houston
New York City

son County shore. The well is an east offset to Harwell's State 1, abandoned with drill pipe stuck at 5821 feet, in March, 1938. At a legislative investigation of the state land department, operators testified that gas sands were cored at 2640-70 feet, and oil sands at 2796-2812 feet, and that the sands were good enough to make a well. The Hall Jordan well was staked on a new reflection seismograph picture which evidently confirms surveys made by Humble Oil & Refining Company, Shell Oil Company and Magnolia Petroleum Company, the principal holders.

Log on Tomball Test

Standard Oil Company of Kansas has released electric logs on Martens 1, recent 8955-foot Wilcox test in the Tomball field, Harris County, which was plugged to 5575 feet for completion in the regular Cockfield pay. Wilcox was topped at 8279 feet, with the logs reportedly showing a 200-foot section of saturation, with shale breaks aggregating 80 feet. So far as is known, no attempt was made at completion in this section. The company has been buying royalty on nearby acreage.

In Harris County, Jack Frazier abandoned Johnson 1, 8515-foot wildcat in the Britton Survey, Mt. Houston prospect, and rigged Griffith 4 in Block 28 of the Houston Suburban Heights Subdivision, a 4200-foot test of the sand which flowed oil in Frazier's Griffith 1, first test of the prospect, 1200 feet east of Griffith 4. Griffith 1 was perforated at 4073-78 feet, flowed oil and salt water, was reperforated and acidized, but later abandoned after drilling to 8350 feet. Hunter & Hargrove's Griffith 1, 500 feet northwest of Frazier's Griffith 1, and Frazier's Griffith 3, found salt water in the 4070-foot sand. Johnson 1, supported by The Pure Oil Company and H. C. Cockburn, drill-stem tested salt water and a little oil in Miocene at 3502-10 feet, topped Discorbis 3725 feet, Heterostegina 3993 feet, Cockfield 7757 feet, Operculina 8019 feet, ran electric log and abandoned at 8515 feet. Shell Oil Company, The Texas Company, and Gulf Oil Corporation are the principal leaseholders.

In Liberty County, Wynn Crosby Drilling Company will make a 6000-foot test of the Cockfield on the southwest flank of Cleveland dome, with tentative location in the James Eldridge Survey, McDonald tract. This field now produces from Cockfield at 5670-75 and 5715-25 feet, with one well producing from Wilcox at 10,000 feet.

In Orange County, 3 miles north of Mauriceville, Dick Schwab staked Brown-Stark Lumber Company 1, 6500-foot wildcat in Section 23, T&NO Survey, Abstract 197, near the Jasper-Newton County line. Schwab has 6000 acres in Orange and Jasper counties on this torsion balance prospect found by Sun Oil Company and Shell Oil Company, and confirmed by gravity surveys by the same operators, who leased, dropped acreage, and started to renew with the recent play. Sun Oil Company's Lutcher Moore 1, in the Echo area to the south, was dry at 9705 feet in Frio, topped at 7200 feet. The Gist prospect of Newton County, northwest of Schwab's location, was drilled intensively to shallow levels.

At Fishers Reef, 11 miles southwest of Anahuac off the Chambers County Trinity Bay shore, Standard Oil Company of Texas and Salt Dome Oil Corporation staked State 1-66, wildcat 1½ miles northwest of same operators' State 1-54, 9538-foot failure, which in May logged 30 feet of oil sand in the Hackberry zone of the lower Frio at 9508-38 feet. Sidewall samples and electric logs gave favorable indications in a number of zones at 8992-9028 feet, showing gas and oil from 2 to 8 percent by volume, although the sections were thin and tests recovered salt water. Location of State 1-66 followed a resurvey by reflection seismograph.

In Harris County, Humble Oil & Refining Company's Furr 1, Greens Bayou wildcat, was running normal to low, topping Frio at 5077 feet, Heterostegina at 4813 feet and Discorbis at 4568 feet. At Ogburn, Walter Goldston stuck testing tool in Josey 1, 2000 feet north of the discovery, and was forced to sidetrack after plugging to 6941 feet.

Other wildcat locations included L. E. Lower's Wilkinson 1, projected 9000-foot test 7550 feet northeast of The Texas Company's Pierce 1, discovery for the Blessing distillate field, Matagorda County, and J. B. Ferguson's Damon 1, Kuykendall Survey, Wharton County, 5500-foot test 2½ miles northeast of the Pledger field, Brazoria County. Shell Oil Company applied for permit for State-1-199, projected 9500-foot wildcat 2 miles west of Smith Point in Galveston Bay.

Louisiana Gulf Coast

Semi-Wildcat Sets Casing; Activity Retarded by Storm

Coastal Louisiana activity was checked by high tides and winds of a Gulf storm. Crews were withdrawn from most operations in the lower parishes, but no appreciable damage to oil company holdings was reported. Severity of the storm in the Plaquemine Parish bays caused a complete cessation of activity there.

At Anse La Butte, St. Mary Parish, Glassell & Glassell were testing Tortoni 1, semi-wildcat on the southwest flank which is expected to provide a ½-mile extension and a new sand. Casing was set at 9350 feet. As stressed at a hearing on spacing regulations for the field last week, flank sand conditions are extremely good; the field rating as the outstanding flank find of the year with Glassell & Glassell's Breaux sand at 4500 feet reported 600 feet thick in aggregate, with porosity of 30-38 percent. The Patin sand on the southeast flank is similar.

At Bayou Bouillon, St. Martin Parish, Superior Oil Company will drill 2 wildcats simultaneously in search of flank sands. Iowa-St. Martin Land Co. 1 was rigging, while location was made for Rycade 1 in Section 73-9s-8e. It is reported that the company will drill on a Shell Oil Company farmout at La Pice, 1939 St. James Parish discovery. Latter company has two wells producing gas and distillate at 10,900 and 11,360 feet.

Simultaneous flank tests will be made at Welch, Jefferson Davis Parish, first proven salt dome in Louisiana. Union Sulphur Company staked Fontenot 1, southeast flank, on farmout from Humble Oil & Refining Company, while Cheesman & Cranston spudded Bourgeouis 1, southwest flank test.

Carter-Perrin & Bryan's Westerfelt-Periman 1, 3000-foot northeast extension for Barataria, Jefferson Parish, flowed normally from 8200-12 feet, with no exact gauge.

Belle Chasse, Plaquemines Parish, 8½ miles southwest of New Orleans, was confirmed by The California Company's Delta Minerals Company 1, Lease 5, which flowed pipe-line oil through ⅜-inch choke, 1100 pounds pressure, from a new shallow sand at 7500 feet. The well is 2200 feet southwest of the discovery, Delta Minerals 1, Lease 7, standing at 10,807 feet, the depth to which it was carried after drowning at 9900 feet in the discovery sand could not be curbed.

Most advanced wildcat operation was Union Sulphur Company's Calcasieu National Bank 1-A, on the China prospect, Jefferson Davis Parish. Operators set pipe at 9891 feet, ran 5½-inch liner to bottom at 9500 feet, and prepared to drill plug for test.

Amerada Petroleum Corporation has taken a 12-month shooting option on 34,000 acres in LaFourche Parish, owned by the City of New Orleans. Selection may be made of 3000-acre minimum blocks at $5 per acre. The land lies between Leeville and Bay Marchand.

H. M. Naylor's Acadia Development Company 1, West Mermentau, Acadia Parish, flowed 50 barrels of distillate and 2,000,000 cubic feet of gas daily through 12/64-inch choke from 9120-35 feet. It is the district's eleventh 1940 find. Operators abandoned the first discovery level, 9700-11 feet, after salt water trouble, and tested at 9140-50 feet and 9100-10 feet without success.

After reworking, Phillips Petroleum Company's Miami Development Corporation 1, Petit Chenier discovery, Cameron Parish, flowed 104 barrels of 45-gravity oil and 150 barrels of salt water daily through ¼- and ⅛-inch chokes. Union Oil Company of California's White Heirs 1, Schooner Bayou, tenth 1940 discovery, was still awaiting an outlet after gauging 226 barrels daily through ¼-inch choke with tubing pressure of 3600 pounds.

Protest Louisiana Law Restricting Geophysical Work

At an informal hearing before the Louisiana State Mineral Board in New Orleans on August 8, it became evident that sentiment among oil operators and geophysicists is overwhelming against enforcement of Act 77, of 1940, recent enactment of the legislature requiring filing of certain maps and reports on geophysical surveys of public lands.

North Louisiana

Twenty-fourth Well for Olla Field Nearing Completion

What appeared to be the twenty-fourth oil well for the Olla field, LaSalle Parish, was in course of completion last week. Placid Oil Company's Louisiana Central Lumber Company 23, NW NW 19-10n-3e, perforated casing at 2220-26 feet and recorded casing pressure of 225 pounds and tubing pressure of 110 pounds. The same company prepared for production test at Louisiana Central Lumber Company 24. Four new locations were staked by Placid Oil Company, and Arkansas Fuel Oil Company staked two new locations in the field.

On the west side of the Lisbon field, Claiborne Parish, location was made for a 9000-foot test to test the Marine for oil or distillate production. The new test is J. D. Caruthers et al's Burgess-Simmons 1, CW½ SW 2-20n-5, 1½ miles southwest of Lisbon Exploration Company's Roberta Vaughan 1, NE NW 36-21n-5w, first and to date only lower Marine producer at Lisbon. This well now is testing recycling possibilities of gas from the lower Marine for injection into the Pettet (basal Glen Rose) lime, oil-producing horizon of this field. Northeast 2½ miles of the deep distillate well, Union Producing Company's Meadows A-1, C NE 18-21n-4w, was drilling below 3626 feet, toward the lower Marine.

Ohio Oil Company's deep test in the shallow Haynesville field, Claiborne Parish, G. W. Taylor 15, Account 1, SE 15-23n-8w, which topped Pettet lime at 5206 feet and cored top of the lower Marine at 7266 feet, approximately 450 feet higher than this contact in the deep Cotton Valley field, Webster Parish, cored lime and shale at 8455 feet.

Union Producing Company was rigging for a wildcat test in DeSoto Parish, Garrett B-1, Section 32-12n-16w, which will go to the Travis Peak. The same company was drilling a test to a similar depth across the Texas line in Shelby County, the location being a farmout from Shell Oil Company.

Arkansas

Fouke Area Has Second Dry Hole; Atlanta at Standstill

The second failure for the Fouke area, Miller County, Arkansas, where two oil wells have been completed in the Paluxy, was recorded last week when Standard Oil Company of Louisiana abandoned Sturgis 3, N½ SE SE 1-17-27, at 3931 feet. The test cored through the zone which produced in Sturgis 1 and 2 in the same section without showing. It is ¼ mile south of the discovery, Sturgis 1. The previous failure in this field was two miles southwest of the discovery. One new test in this field spudded last week.

Drilling activity in the Atlanta field, Columbia County, ceased with a recent completion, the total producers from the Smackover lime now being 16. The limits of the field appear defined in all directions. It was discovered in December, 1938.

One new location was staked in the Dorcheat field, Columbia County, Lion Oil Refining Company's Dickens Unit 1, NE NW 16-18-22.

Three tests were drilling in the Magnolia field, Columbia County; one was drilling at Buckner, Columbia County, one at Dorcheat, and one at McKamie, LaFayette County.

Arkansas Permits

Three drilling permits were issued last week by the Arkansas Oil & Gas Commission, as follows: Columbia County—Normandie Oil Corporation's C. E. Crumpler B-1, SE SE 18-17-19; Nevada County—O. F. Whitaker's W. M. Edwards 2, NE SE SW 3-15-20; Sebastian County—Ozark Natural Gas Company's R. G. Barton 1, CSW SW 15-9n-29w.

Louisiana Permits

Forty drilling permits were issued last week by the Louisiana Conservation Commission, of which 15 were in North Louisiana, divided among the following parishes: Caddo 7, Claiborne 2, DeSoto 1, La Salle 4, and Morehouse 1. The 25 in South Louisiana were in the following parishes: Acadia 1, Ascension 2, Beauregard 1, Calcasieu 1, Cameron 2, East Baton Rouge 1, Evangeline 2, Iberville 2, Jefferson 1, Jefferson Davis 1, La Fourche 1, Plaquemines 4, St. Charles 2, St. Martin 2, and Terrebonne 2.

Mississippi

Derrick Failure Delays Test of Pickens Well

Attempts to complete the fifth producer for the Pickens field, Yazoo County, Mississippi, met a set-back last week when derrick at Exchange Oil Company's Wilburn 5, SW NW SW 32-12n-2e, was pulled in while attempts were being made for a drill-stem test at 4874 feet in the Wilburn sand. With elevation of 236 feet, it topped Eutaw (Blossom) at 4805 feet and Wilburn at 4868 feet. A 6-foot Wilburn core was very porous, but had no show and a salty taste. Electric log was run, and attempts made to run formation tester ended in the mishap.

On the east edge of the Tinsley Dome field, Yazoo County, Union Producing Company's Cesana 3, SW 18-10n-2w, was waiting on cement at 4850 feet after topping chalk at 4612 feet (elevation 214 feet), logging 80 feet of broken oil sand. In a drill-stem test with tool set at 4705 feet and ⅜-inch chokes at top and bottom, and open 8 minutes, 90 feet of oil-cut mud, 2180 feet of oil and another 90 feet of oil-cut mud showed.

Exchange Oil Company was rigging for a wildcat test on a 10,000 acre block in Jefferson Davis County, South Mississippi. J. J. Newman Lumber Company 1, SE NE 36-7n-19w, 2 miles northwest of Fred E. Courson's L. J.

We Keep the Home Fires Burning

Of course a good operator can find his way about in any field without a compass. But if you should drift our way some time with a yen for supply service garnished with well acclimated experience, we'll probably do some business. We've stoked the home fires for 32 years. But don't expect old wives' tales. We serve the most exacting clientele in the oil business, with more faith in geology than legend. At any PELCO store you'll find what it takes to dig or produce a well with neatness and dispatch.

PELICAN WELL TOOL & SUPPLY CO.

SHREVEPORT LOUISIANA

PELCO

Houston
Greggton
Berwick
Houma
New Iberia
Magnolia

Bailey 1, abandoned last winter as a dry hole at 6012 feet.

Roy E. Watson is curing title on two wildcat blocks in Kemper County, in 11n-14e and 11n-15e, and in this same county, Charles B. Gholson, Jackson, has acquired 2000 acres of R. M. Crabb's acreage in 10n-14e.

Frederick F. Mellen and Raymond Gear, of West Point, Mississippi, have signed contract with W. B. Phillips, Bowling Green, Kentucky, to drill two wildcat tests to the Trenton sands, or possibly to the Beekmanton sands, on their block covering the Bear Creek Dome, centered around Section 10-4s-15w, Colbert County, Alabama, and extending into 4s-11e, Tishomingo County, Mississippi. Operations are to start about mid-August.

Rocky Mountain Area

Locate Extension Test to Shannon Sand at Cole Creek

An extension test to the Shannon sand, ¼ mile south and ½ mile east of the Dakota-Lakota discovery in the Cole Creek field, 13 miles northeast of Casper, was spotted last week by General Petroleum Corporation.

The company was digging cellar for 7-22-F, NW SW SW 22-35n-77w, Natrona County, Central Wyoming. The discovery, to the northwest, was being plugged back and perforated opposite the Shannon. The well, 55-21-G (formerly carried as Government 1), NW NW SE 21-35-77w, was pulling 8⅝-inch casing from point of cutting at 4600 feet, and will be perforated through the 11¾-inch casing opposite the Shannon sand at 4509-4539 feet. The well was originally completed in the Dakota-Lakota sands at 8015 feet for around 250 barrels daily. The company's 71-21-G, CNE NE NE 21-35n-77w, an outside location, was drilling at 2600 feet.

Wertz field, Carbon County, Central Wyoming, was extended ⅛ mile by Sinclair-Wyoming Oil Company's Unit 14, NW SW NE 7-26n-89w, a near completion. At 6001 feet it tested 180 barrels per hour from the Tensleep sand. In the Muskrat field, Fremont County, Sinclair-Wyoming Oil Company's Muskrat 2-A, NW SE SW 34-34n-92w, was drilling at 4758 feet.

In Southwest Wyoming, Gus Pongratz's Clark 1, NE NE NE 22-19n-104w, an extension test looking for oil on the North Baxter Basin gas structure, was drilling at 3375 feet in the top of the Morrison formation, nearing its first objective, the Sundance sand. Red Desert Corporation's Edith Aspden 1, CNW SW NW 34-18n-103w, Middle Baxter Basin, Sweetwater County, had water in the First Frontier sand at 2565-2597 feet, and was coring at 2722 feet. Union Gas Company's Hummer 1, NW NW NE 6-17n-103w, was at 1920 feet, running 8⅝-inch casing to the top of its first objective, the First Frontier sand.

Across the Colorado line in Moffat County, Mountain Fuel Supply Company's Georgia Kuykendall 2-A, CSW NW SW 23-12n-100w, Hiawatha field, was testing through perforations in the 6⅝-inch casing cemented at 2584 feet.

New Mexico

Maljamar Field Activity Up With New Market Outlet

Lea County was assigned eight tests the past week, including three for the Maljamar field which is taking the lead as the most active in the county, although it has been on production 14 years. Prior to last spring the latter field has been dependent upon Artesia district refineries for market. The entry of a trunk line has provided a greater market demand and operators are taking advantage of their opportunity to develop their extensive holdings.

Crude purchasers in Lea and Eddy counties have indicated a greater demand for oil since the last month-end proration hearing at Santa Fe. Three of the largest buyers are especially active, and are due to boost their nominations at the next session. One concern is negotiating for the purchase of 190,000 barrels of Artesia grade crude held in storage at Houston by Trans-Pecos Pipe Line Company. This oil was accumulated to apply on an Italian contract which was automatically terminated by the war.

Continental Oil Company's State 9-J-2, South offset to the Arrowhead pool discovery, flowed an average of 160 barrels of oil hourly for 2 hours through casing with drill pipe in the hole, with gas volume rated at 7,000,000 feet daily. The well is bottomed at 3839 feet. Tubing packer will be set to lower the gas yield. Gulf Oil Corporation's State Mark 1, C NW SE 3-22s-37e, west outpost, is showing for a small pumper after nitro shot and acidizing broken pay at 3670-3735 feet.

Texas Pacific Coal & Oil Company's State 19-A, C SW SE 7-22s-36e, southwest portion of the Eunice field, flowed 15 barrels of oil hourly after perforating casing, which was cemented on bottom at 3836 feet. This method of completion is rarely used in New Mexico, but it affords control of the gas yield. The company's State 20-A, north offset was drilling at 600 feet.

Vacuum field was assigned two new operations on the south edge of production by The Texas Company. The company's State 2-W, northeast edge of the field, filled 1000 feet with oil after nitro shot at 4700 feet, and will be equipped on pump.

Ventura Oil Company's Lowe 1, C SW SE 26-13s-37e, northeastern Lea County wildcat, was drilling at 4960 feet. Top of lime was called at 4610 feet. With an elevation of 3863 feet, being 28 feet higher on structure than C. E. Reynolds Drilling Company's Anderson 1, 3½ miles west. The latter was junked at 5235 feet in December 1928. Lowe 1 is on a strike from the Wasson field in Texas, and intermediate acreage has been in demand for some months. Great Western Producers' State 1-D, C SE SE 30-12s-32e, has set up rotary to test a wildcat block in northwestern Lea County that originally was undertaken by Weiner & Stogner, who junked at 1373 feet.

California

Outpost May Define Northwest Limits of Rio Bravo Field

Possible determination of northwest limits of Rio Bravo field, Kern County, may be made by Superior Oil Company's Riggs 1, Section 21-28-25, ¾ mile northwest of production. The test was drilling below 12,065 feet, reportedly in shale with occasional streaks of sand. The main objective is believed not yet encountered, and should this interpretation prove correct, first definite indication of the northwestern flank of the structure would be given. In the productive area of the field, wells are normally bottomed at about 11,500 feet. The test was understood to have encountered streaks of sand between 11,490 and 11,732 feet, but whether the showings were of importance has not been determined.

R. E. Havenstrite's wildcat on property of Lincoln Petroleum Company, Section 16-4-17, Los Angeles County, Newhall-Castaic area, cored 30 feet of oil sand at 6036 feet. Cores to 6212 feet were aid to be yielding fractured shale, showing oil in the fractures, placed in the Miocene. Core samples are said to indicate a lower-gravity product than common to this territory.

The Texas Company was coring in shale for the Sespe at 3515 feet in Bishop A-1, wildcat in the Elwood district of Santa Barbara County, Section 13-4-29. At 3305-64 feet, operator cored tight grey sand with salty sand showing slight odor, and on formation test recovered some 1400 feet of salt water along with a slight blow of gas.

At the northwestern edge of the Huntington Beach field, Orange County, Section 34-5-11, Standard Oil Company completed Bolsa 12 flowing 532 barrels of 18.9-gravity oil daily, cutting 40 percent. The test was bottomed at 4783 feet and 2106 feet of liner, including 1451 feet of perforations, landed on bottom.

Royalty Service Corporation will attempt to extend the heavy producing area on the west side of the South Rosecrans field, Los Angeles County, with a test to be drilled southeast of the intersection of Redondo Boulevard and Main Street. Production was developed in this area recently by Southern California Petroleum Company, St. Anthony Oil Company and Thomas Kelly & Sons in wells drilled to the south of Royalty Service Corporation's location.

Although confirmation is lacking, reports indicate that Wood-Mellon Oil Company found the Seventh Callender zone wet in Wood 1, wildcat near Figueroa and Victoria Streets, Dominguez area of Los Angeles County. Interesting showings were reported, however, in the Sixth Callender, and a possible sand body was reportedly cored near 3400 feet. Cores near 6840 feet in the Sixth Callender showed good cuts. Bottom was at 7240 feet.

UNITED STATES WELL COMPLETIONS

Arkansas

Miller County (Fouke)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Standard Oil Co. of La., Sturgis 3, 1-17-27	*	3931

Union County (Rainbow City-Nick Springs)—

Fohs Oil Co., Grace 2, 31-17-14	250	3975

Union County (Urbana)—

Marine Oil Co., Thompson A-13, 3-18-13	220	3060

California

Fresno County (Coalinga Northeast)—

Union Oil, Cook 55-18B	380	8282

Fresno County (East Coalinga Eocene)—

Standard, No. 1-19F	3816	8025
No. 51-19F	2568	7876

Kern County (Cole's Levee)—

Ohio Oil, KCL F-9-47-3	506	9700
Richfield Oil Corp., KCL-A 52-33	1720	9275

Kern County (Greeley)—

Standard, KCL 12-9	3080	11,510
Superior, Moore 1	1560	11,500

Kern County (Ten Sections)—

Shell, KCL A-6-28	1220	8220
KCL A-41-30	1304	8210

Los Angeles County (Aliso Canyon)—

Tide Water, Porter 14	1427	5290

Los Angeles County (Dominguez)—

Shell, Reyes 106	1296	7935

Los Angeles County (Long Beach)—

Apex Pet. Co., Morris 16	128	3147
Wood 2	150	3680
Oceanic Oil Co., No. 4	55	5117

Los Angeles County (Montebello West)—

Columbia Oil Co., Crawford 19	137	8154
Pongratz Pet. Co., Newmark 1	382	7790

Los Angeles County (Newhall Potrero)—

Barnsdall, RSF 11	1100	7790

Los Angeles County (Wilmington)—

Royalty Service Corp., Banning 11	20	3650
Selegna Pet. Corp., No. 4	35	3309
Union Pacific, UP 149	431	3529
UP E-10	206	3774
UP E-26	5000	4000
Vulcan Oil Co., W-3	365	3552

Ventura County (Ventura Avenue)—

Shell, Taylor 122	3454	7668
Tide Water, VL&W-7	368	8657
VL&W-46	4286	10180

Colorado

Larimer County—

C. D. Cunningham, State-Warren 2, cwl se nw 6-11n-68w	*	290

Illinois

Bond County—

W. F. Lacy et al, Cartmell 1, nw ne se 29-5n-2w	*	2547

Clark County—

General Pet., Ingersoll 1, ne nw ne 32-11n-14w	*	1325

Coles County—

Tex Harvey, Erwin 1, ne sw sw sw 36-13n-9e	*	752

Clinton County—

Ring & MacLean, Hanseman 6, se nw se 1-1n-1w	100	2922
Ed. Whitcher, Kaelin 1, se ne sw sw 12-1n-1w	428	2931
Roy Benoist, Knolhoff 1, ne ne nw 11-1n-2w	50	1321
L. L. Benoist, Knolhoff 2, swc nw nw 11-1n-2w	80	1323
Knolhoff 3, nw sw ne nw 11-1n-2w	80	1323
Dick Duncan, Knolhoff 2, ne se nw nw 11-1n-2w	105	1328
Knolhoff 3, se ne nw nw 11-1n-2w	115	1326
H. F. Williams, Bach Bros. 1, nw nw nw 21-1n-2w	*	2816
Bert Fields, Zachary 1, sw sw ne 1-1n-3w	*	2657
Mosebach, Schlarmann 3, nw se se 5-1n-3w	130	2444
E. Frank Jones, Lippert 1, cs½ se se 27-2n-1w	*	2973
Adams O. & G., Copple 14, sw sw se 35-2n-1w	41	1362
Copple 22-D, swc se sw 35-2n-1w	1711	2905
Gulf, Hoffman-Felton 1, se nw nw ne 35-2n-1w	*	2937
Ellerman-Buehler 2, nw se se sw 36-2n-1w	252	2923
Max Pray, Stein 1, nw sw sw se 36-2n-1w	*	2936
F. Coster, Rohr 1, ne nw se 9-2n-3w	*	1034

Edwards County—

Jarvis Bros., Greene 1, cn½ ne se 24-2s-10e	240	3137
Herschbach Pet. Co., Perkins 1, ne sw sw 2-3s-10e	*	1991

Fayette County—

Texas, Bennyhoff 8, sw nw se 30-6n-3e	126	1580
Bennyhoff 1, nw nw ne 31-6n-3e	*	1612
Wooton 12, sw sw se 31-7n-3e	196	1556
Carter, Hawkins 6, se se sw 17-7n-3e	42	1538
Miller 3, ne se nw 17-7n-3e	246	1575
Phillips 1, sw nw nw 1-8n-3e	144	1555
Alsop 1, se sw se 3-8n-3e	*	1607
Drees-Miller 1, sw nw ne 12-8n-3e	54	1476
Tipsword 2, se sw ne 13-8n-3e	144	1488
Evans 1, se se sw 29-8n-3e	244	1531

Franklin County—

E. S. Adkins, Old Ben Coal Co. 2, ne sw se ne 24-6s-1e	*	2860

Hamilton County—

Taylor Dr. Co., Graves 1, cw½ ne se 15-6s-6e	*	3315
Kingwood, Dodd 4, ne ne nw 6-6s-7e	117	2716

Jackson County—

Trans-State Oil Co., Burroughs 1, sw se sw 6-7s-1w	*	2035
F. R. Dunne et al, Baum 1, sw se ne se 12-9s-4w	*	990

Marion County—

Texas, City of Centralia 65, nw ne sw sw 4-1n-2e	205	1890
Tate 24, nw se sw nw 5-1n-2e	369	3400
Bundy 11, ce½ sw ne 6-1n-2e	846	3421
Canull 18, se nw 6-1n-2e	827	3381
Stroup 21, nw se nw 31-2n-2e	595	3415
Tate 20, nec nw sw 31-2n-2e	489	3475
Zephyr, Lankford 7, sw ne se 33-2n-2e	20	1926
Tide Water, Miller 7, cne ne 18-1n-2e	168	2089
Lee & Roberts, Young Hrs. 1, se ne se 17-2n-2e	215	3546
Kingwood, Rodgers 1, sw nw ne se 21-2n-2e	*	2100
Magnolia, Young 114, se nw se nw 28-2n-2e	210	3487
Pugh, Toulme 6, sec sw sw 30-2n-2e	75	2041
Baldwin, Holmes 9, sw se sw ne 33-2n-2e	375	3538

Montgomery County—

Harry Randall et al, Street 1, sw sw ne 31-11n-5w	28	624

Richland County—

KeKalb, Schilling 4-C, ne se se 32-4n-9e	26	2623
Mammoth, Carrell 1, sw sw se 33-4n-9e	40	2620
Pure, Grove 2, ce½ se ne 31-5n-10e	243	2854

[*Continued on next page*]

Summary of Drilling Operations in the United States, Week Ended August 10, 1940

	WELLS COMPLETED							*PERMITS FOR NEW WELLS				
	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total 1940	Total this Date 1939	This Week	Total this Month	Total 1940	Total this Date 1939	Year Total 1939
Alabama	.....	.....	.....	.....	.....	3	1	.....	.....	.....	.....	.....
Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arkansas	3	2	.....	1	470	115	146	3	3	90	151	223
California	26	26	.....	.....	34,994	817	657	19	33	662	631	1,174
Colorado	1	.....	.....	1	.....	5	15	.....	.....	.....	.....	.....
Florida	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Georgia	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Illinois*	82	60	.....	22	15,253	2,425	2,313	77	137	2,757	.....	893
Indiana	12	9	2	1	1,041	265	112	.....	.....	.....	.....	.....
Kansas	55	47	2	6	72,041	1,206	837	32	81	1,253	935	1,583
Kentucky	3	2	1	.....	15	194	397	.....	.....	.....	.....	.....
Louisiana	36	27	1	8	6,387	1,051	644	40	40	976	756	1,449
Michigan	17	8	1	8	696	779	880	20	40	703	848	1,419
Mississippi	.....	.....	.....	.....	.....	115	7	.....	.....	.....	.....	.....
Missouri	.....	.....	.....	.....	.....	6	.....	.....	.....	.....	.....	.....
Montana	8	7	.....	1	579	117	84	.....	.....	.....	.....	.....
Nebraska	5	.....	.....	5	.....	5	1	3	3	3	.....	.....
New Mexico*	17	15	.....	2	2,257	446	383	11	22	396	25	293
New York†	18	17	1	.....	61	653	338	.....	.....	.....	.....	.....
North Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ohio	.....	.....	.....	.....	.....	489	568	.....	.....	.....	.....	.....
Oklahoma	37	22	4	11	3,653	1,337	1,286	29	65	1,126	1,291	2,059
Pennsylvania†	40	40	.....	.....	48	1,531	949	.....	.....	.....	.....	.....
South Dakota	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....
Texas	210	152	6	52	91,689	6,466	6,130	145	341	7,276	6,602	10,269
Utah	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....
West Virginia	.....	.....	.....	.....	.....	315	315	.....	.....	294	417	718
Wyoming	1	1	.....	.....	432	84	84	.....	.....	.....	.....	.....
Total this week	571	435	18	118	229,616	18,431	16,148	379	765	15,537	11,656	20,080
Total last week	486	345	16	125	163,459	17,860	15,550	386	386	15,158	11,266	20,080
Total this year	18,431	13,506	950	3,975	7,071,997	.....	.....	.....	.....	.....	.....	.....

* This tabulation includes those states where weekly data are available; figures for Illinois date from October 15, 1939; New Mexico from August 1, 1939.
† Includes water-input wells.

United States Well Completions—*Continued*

Company, Well and Location	Init. Prod. Bbls.	Depth
ILLINOIS—Continued		
Wabash County—		
Findlay et al, Guisewife 1, ne nw sw 3-1n-13w	285	2677
Big Chief, Seibert 2, nw se sw 34-2n-13w	425	2685
Sam Yingling, Seiler 1, sw sw sw 26-1s-13w	430	2132
Vickers Pet. Co., Bump 6, nw nw sw 9-2s-13w	72	2454
Continental, Grey 7, cse ne se 19-2s-13w	55	2468
Gray 5, se ne ne 30-2s-13w	170	2479
Tide Water, Spencer 5, nw nw nw 20-2s-13w	*	2900
Longhorn Oil, Heil 11, swc sw 7-3s-13w	140	2495
Washington County—		
Magnolia, Tiemann 2, nw se nw sw 23-1s-1w	74	1559
Tiemann 3, sw se sw sw 23-1s-1w	302	1547
Tiemann 3, sw se sw sw 23-1s-1w	264	1548
Shell, Brown 3, cse ne sw 23-1s-1w	212	1554
Williams et al, Koelling 1, sw se sw se 23-1s-1w	*	1598
Gulf, Stanton 2, ne ne nw 26-1s-1w	65	1564
Kyatt, Smith 1, swc se se 23-2s-1w	*	1862
Wayne County—		
Pure, Powell-Hubble Cons, 1, ce½ se se 5-1n-8e	188	3100
Hubbel 4, cw½ se ne 32-2n-8e	325	3100
Hubbel 5, cw½ se se 32-2n-8e	776	3087
N. V. Duncan, Skelton 1, ce½ se se 20-2n-8e	*	3063
Texas, Boggs 6, cne se 8-3s-7e	226	3360
Davis 1, cw½ nw nw 10-2s-7e	144	3315
H. H. Weinert, McPherson 7, ce½ sw nw 3-2s-7e	500	3250
Robinson, Felix 2-A, se sw sw 26-2s-8e	201	3414
New Penn, Elliott 2, nw nw ne 35-2s-8e	118	3410
White County—		
Texas, Poorman 3, sw ne se 31-3s-8e	90	3260
John Less, Pollard 1, se ne se 29-3s-9e	365	3422
Sun, Garner 3, ne sw se 1-5s-10e	*	2350
Mercer Bros., Chapman 1, ne ne nw 26-6s-8e	450	3077

Indiana

Gibson County—		
Joe Bander et al, Cooper 36, swc ne ne 13-3s-14w	235	2507
Lewis Prod., Cooper 10, se se nw 13-3s-14w	160	2491
Hall Edwards, Rec., Maier 4, ne ne se 14-3s-14w	200	2500
Posey County—		
Continental Oil, Kleiderer 1, nw ne ne ne 33-3s-14w	54	2803
Roberts Bros., Keck 6, swc ne nw 34-3s-14w	150	2809
Harrry Sandler, Keck 3, nec sw nw 34-3s-14w	135	2812
Gulf Ref., Lang 2, ne sw ne ne 7-6s-12w	¶2.42	667
Dickhaut 1, ne sw nw sw 5-6s-12w	85	2402
Spencer County—		
Ben Davis, Sims 1, swc se 22-6s-7w	*	868
Sullivan County—		
Walter K. Jones, Huff 1, nw sw 35-8n-10w	¶0.04	639
Vanderburg County—		
J. L. Drake, Effinger 10, sw c nw 33-5s-10w	2	942
K. R. Bixby, Ziss 2, sw nw se sw 30-5s-11w	20	1243

Kansas

Barber County—		
Barbara, Price "E" 1, cwl nw ne sw 9-33-13w	¶23.0	4719
Barton County—		
Derby, State "A" 1, nw sw ne se 36-19-12w	360	3366
Champlin, Clawson 1, cs½ nw nw 17-20-11w	3000	3307
Butler County—		
Rex & Morris, Jahren 1, nw ne se 29-25-8e	*	2708
Greeley 2, se ne se 16-28-7e	229	2689
Sinclair-Prairie, Watts 10, ce½ se se 13-26-4e	15	2559
Adair & Morton, Brandt 11, nw ne ne 15-28-7e	296	2763
Cowley County—		
Aylward, Hanlen 1, sw nw ne 35-30-4e	222	2966
Ryan, Couch 3, nw se se 13-30-5e	328	2819
Saco, Faust 1, sw ne ne 33-31-3e	*	3368
Sinclair-Prairie, Waite 12, ne sw se 19-32-3e	26	2600
Shawver, Balruth "A" 1, ne se ne 8-34-3e	24	3312
Ellis County—		
Lario, Romine 6, ce½ nw sw 18-11-16w	1255	3364
Cities Service, Colahan 15, nw sw sw 24-11-17w	3000	3666
Central Petroleum, Hadley 3, nw ne se 12-11-18w	3000	3373
Hadley 4, nec se 12-11-18w (otd 3358 ft)	415	3145
Darby, Peavey 4, cs½ ne sw 13-11-18w	3000	3385
Gulf, Arnhold 1, cn½ ne se 36-13-17w	*	3604
Ellsworth County—		
Magnolia, Haska 1, cw½ sw sw 5-16-10w	1532	3296
Schroeder 1, cw½ sw sw 26-16-10w	3000	3284
Skelly, Harbacek 1, ce½ ne ne 7-16-10w	139	3325
Atlantic, Stoltenberg "A" 2, cs½ se se 27-16-10w	3000	3289
Stanolind et al, Stoltenberg "D" 2, cs½ se ne 27-16-10w	3000	3315
Mid-Continent, Matoush 2, cn½ ne ne 34-16-10w	3000	3285
Lario, Mehl 3, cn½ se se 35-16-10w	3000	3293
Lauck & Moncrief, Ehler 2, se sw nw nw 35-16-10w	3000	3300
Cities Service, Strattman 1, cs½ sw sw 36-16-10w	3000	3295
Continental et al, Janssen "B" 12, se nw sw 34-17-8w	567	3245
Cities Service, Mollhagen "D" 2, se ne se 30-17-9w	372	3242
Pryor & Lockhart, Strattman 3, cs½ ne ne 2-17-10w	3000	3295
Greenwood County—		
Barbara, Shneider 8, nwc sw 10-23-13e	28	1769
Marylyn, Evanson 1, sw nw nw 24-24-9e	50	2239
Coulter et al, Pottorff 1, cn½ sw sw 16-28-11e	*	1221
Lemon et al, Lee 1, se se nw nw 17-28-11e	*	1360
Harvey County—		
Drillers Gas Co., Frederick 1, csw se 8-23-3w	*	3413
Leavenworth County—		
McLaughlin et al, Fee (Dark) 2, sw ne sw nw 4-10-22e	¶14.0	1412
McPherson County—		
Williams et al, Nordling 1, ne se sw 19-18-2w	25	2330
Republic Nat., Swanson 4, ce½ ne sw 18-20-5w	3000	3335
Transwestern, Nelson 1, cw½ se ne 19-20-5w	1799	3359
Bennett et al, Knackstedt 2, cn½ nw sw 30-20-5w	3000	3323
Peterson 2, cn½ nw nw 32-20-5w	3000	3365
Pratt County—		
Atlantic et al, Runyan 2, ce½ ne ne 11-27-13w	1668	4295
Rice County—		
Transwestern et al, Habiger "B" 3, cw½ nw ne 5-18-10w	3000	3242
Shumway 2, cs½ ne ne 13-20-6w	76	3376
Phillips, Brandenstein 3, cn½ sw nw 35-19-10w	208	3298
Brown-Willard, Renollet 2, sw ne se 36-20-8w (otd 3317 ft)	125	3326
Rooks County—		
Vickers, Tatkenhorst 2, cw½ ne se 10-9-16w	2206	3247
Russell County—		
Liggett et al, Durham "A" 1, cw½ ne ne 20-11-15w	120	3326
Witt, Witt 7, se nw se 3-14-15w	141	3297
Carter, Detrich 10, cn½ se se 8-15-13w	173	3256
Cities Service, Redetzke 1, nec 21-15-13w (otd 3093 ft)	2936	3316
Shell, Batt "A" 4, ne se se 35-15-14w	2418	3336
Stafford County—		
Cities Service, Smith "B" 1, se sw nw ne 16-21-11w (otd 3409 ft)	3000	3381
Stanolind, Ahnert 1, cw½ se ne 10-22-12w	268	3635
Transwestern, Banker "C" 1, ce½ nw ne 10-24-11w	3000	3812

Kentucky

Butler County—		
Cumberland Pet. Co., Sweezy 1	10	433
Hancock County—		
W. J. Flescher et al, Snyder 1	½0.5	405
Ohio County—		
Ira Huff et al, Cheek 8	5	334

South Louisiana

Anse La Butte—		
Glassell & Glassell, Breaux 3	260	4522
Bancroft—		
Republic, Columbia Ld. & Tbr. Co. 19	197	7330
Barataria—		
California, Fleming 1	319	8797
Bay St. Elaine—		
Jeff. Lake Sulph. Co., Salt Dome Roy. Co. 2	*	1302
Charenton—		
Pan-American, Robischaux 23	41	1129
Cheyneyville—		
Richardson, Weil 13	341	5752
Eola—		
Amerada, Marchive 10	162	6450
Bass, Richie 3	300	8575
Lilly, Dent 2	165	8564
Garden Island—		
Texas, State 47	497	5593
Gillis—		
Union Sulphur, Castle 12	190	7050
Golden Meadows—		
Dayvault, Lea 1	154	5690
Marr & Vaughn, B&D Unit 3	300	11010
Grand Bay—		
Superior, State 5 (wo)	388	8960
Jennings—		
Stanolind, Crowley O. & M. Co. 118	495	7295
Neale—		
Atlantic, Rice Land Co. 2-B	443	8435
Paradis—		
Texas, Sunset Realty 1	54	11246
Sorrento—		
Sorrento Syndicate, Bernard 2	*	4048
Sweet Lake—		
Pure, Yount-Lee 18	330	7856
Venice—		
Tide Water, Buras Levee 8	340	10560
Ville Platte—		
Continental, Tate 5	295	10070
Iberville Parish—		
Falcon-Seaboard, Folse 1, Samstown area	*	11502
Vermilion Parish—		
Union of California, White Heirs 1, discovery Schooner Bayou	226	10379

North Louisiana

Bienville Parish (Bisteneau)—		
Union Prod. Co., Havis Unit 1, 11-16n-10w	¶45.0	5795
Bossier Parish (Sligo)—		
Triangle Dr. Co., Skannal C-7, 13-17n-12w	sw	3111
Caddo Parish (Pine Island)—		
F. W. Bennett, Askew 1, 28-21n-15w	50	1550
L. A. Farr, Muslow A-1, 31-21n-15w	*	1740
George Mack et al, Stone 1, 12-20n-16w	95	1520
Morris Co., Caddo Oil & Minerals Co. 2, 12-20n-16w	100	1520
S. Reele, Godfrey 1, 1-20n-16w	75	1540
Texas Co., Herndon 13, 14-21n-15w	250	1640
La Salle Parish (Olla)—		
Arkansas Fuel Oil Co., Goodpine C-1, 24-10n-2e	150	2246
H. C. Cummings et al, Hardtner & Tannehill 1, 2-10n-2e	*	2533
Placid Oil Co., La. Central Lbr. Co. 19, 36-10n-2e	†	3312
La. Central Lbr. Co. 23, 30-10n-2e	170	2410
Webster Parish (Cotton Valley)—		
Hunt Oil Co., Bodcaw Lbr. Co. 7, 15-21n-10w	*	5967

Michigan

Allegan County—		
A. E. Kopprasch, DeWeerdt 1, sw sw ne 14-4n-15w	*	1838
Howard Fowler, Stankey 3, se se se 4-3n-14w	30	1505
H. C. Nelson, Vrieling 6, ne nw ne 8-4n-14w	*	1975
Crown Dev. Co., Nyhuis 3, sw se sw 16-4n-14w	25	1594
Isabella County—		
Wicklund Dev. Co., Nelles 1, nw sw se 21-16n-3w	*	3740
Cities Service, Lasher 1, nw nw sw 28-16n-3w	176	3711
Kent County—		
H. C. William, Beaumont 1, e½ nw 28-7n-12w	25	1900
Smith Pet. Co., McShane 2, ne ne se 32-7n-12w	200	1886
Zeff 1, ne se se 32-7n-12w	120	1787
Cudahy 8, ne nw 33-7n-12w	50	1992
Macom County—		
Lenawee O&G Co., McCarberry 1, nw ne nw 36-5s-5e	*	2520
Midland County—		
Pure Oil, Naramore 32, cs ne nw 15-13n-1w	70	3399
Missaukee County—		
D. E. Hughes, Heeringa 1, ce se se 21-21n-8w	*	4015
Montcalm County—		
Belvidere Oil Co., Bates 1, nw se se 17-12n-6w	*	1314
Weeks 1, sw se ne 28-12n-6w	¶2.0	1309
Oakland County—		
Wicklund Dev. Co., Dhroner 1, ne se sw 2-4n-8e	*	1642
Van Buren County—		
W. Spencer Cook, Ray 1, sw ne nw 35-1s-13w	*	1305

Montana

Glacier County (Cut Bank)—		
Montana Headlight Oil Co., Britton 6, nw sw se 11-34n-6w	100	2885
Santa Rita O. & G. Co., Tribal 11, ne ne ne 16-35n-6w	120	2988
Steele Creek Prod. Co., Carmen 2, se se sw 19-34n-5w	75	2810

United States Well Completions—*Continued*

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTANA—Continued		
Toole County (Kevin-Sunburst)—		
Texas Pacific Coal & Oil Co., Howling 11, se se ne 9-35n-2w	109	1658
Texas Co., Bruins 13, sw se se 9-35n-2w	80	1615
Silver Oils, Haskins 3, ne sw sw 25-36n-2w	60	1620
Coolidge & Coolidge, Midland Realty 2, nw se sw 25-36n-2w	35	1650
Stock Bros., Government 1, cnw se 17-35n-2w	*	1654
Nebraska		
Bluff County—		
Wood et al, McHenry 1, se ne ne 33-23n-57w	*	1209
Fairy Pet. Corp., McCulley 1, cse se 35-23n-58w	*	2100
Richardson County—		
Pawnee Royalty Co., Zenther 1, cne se 8-1n-16e	*	2404
Campbell & Sparks et al, Horton 1, cne nw 5-1n-15e	*	3398
Carlock et al, Holt 1, csw sw 35-2n-16e	*	2503
New Mexico		
Eddy County—		
Emperor Oil Co., Puckett 7, cnw se 24-17s-31e	55	3920
Premier Pet. Co., Maddren-Beeson 3-B, nw se sw 27-17s-30e	168	3252
Tallmadge et al, State-Taylor 1, sw se ne 32-17s-30e	*	2943
Texas Trading Co., State 1, nw sw ne 16-18s-29e	125	2685
Eddy County (Wildcat)—		
Martin Yates Jr. et al, McCall 1, se sw sw 24-18s-26e	96	1032
Lea County (Arrowhead)—		
Humble, State 3-M, cse se 18-22s-37e	203	3710
Lea County (Eunice)—		
Texas Co., State-Lieu 22-H, csw nw 20-20s-37e	224	3858
Lea County (Maljamar)—		
B. Cockburn et al, Baish 11-B, csw se 27-17s-32e	150	4132
Baish 14-B, cnw nw 27-17s-32e	175	3996
Baish 15-B, csw nw 28-17s-32e	200	3815
Maljamar O&G Corp., Baish 3-B, cnw se 22-17s-32e	192	4010
W. G. Woods et al, Simon 1-B, cne ne 30-17s-32e	158	3751
Lea County (Mattix)—		
Stanolind, Meyers 6-A, se nw se 22-24s-37e	75	3562
Lea County (Penrose)—		
J. C. Clower et al, State-Humble 2, sec ne 29-22s-37e	96	3681
Lea County (Vacuum)—		
Magnolia, State-Bridges 71, cne nw 14-17s-34e	335	4739
Texas Co., State 3-D, cse sw 27-17s-34e	5	4760
Lea County (Wildcat)—		
Gulf Oil Corp., Drinkard 1, cnw se 25-22s-37e	*	4500
New York		
Allegany County—		
R. B. Moore et al, Daggett farm, Bolivar	8	1372
R. B. Moore No. 6, Daniels farm, Bolivar	6	1412
Ebenezer Oil Co., Emerson farm, Scio	8	1070
Albert Oil Co., Easton farm, Alma	8	1349
Chenunda Creek Oil Co., Richmond farm, Willing	5	1059
Bradley Prod. Corp., Monder farm, Alma	5	1322
Jacob Trinkle Est., Hill farm, Genesee	5	1417
Cleveland Bros., Clemons farm, Clarksville	8	1640
Rufus Scott, Scott farm, Bolivar	8	1536
Empire Gas & Fuel Co., Hazel Atwood farm, Independence	¶6.5	4567
Water Intake Wells—		
Sloan & Zook, McDavitt farm, Bolivar	...	1276
Messer Oil Corp., Courtney Hollow farm, Genesee	...	1375
Courtney Hollow farm, Genesee	...	1369
H. N. Sawyer & Co., Chadwick farm, Wirt	...	1346
McEnroe & Brown, Bellamy farm, Alma	...	1330
McEbenwood Oil Co., McAndrews farm, Andover	...	1318
Bradley Prod. Corp., Monder farm, Alma	...	1362
L. H. Thornton et al, Fassett farm, Willing	...	1269
Oklahoma		
Caddo County—		
Stephens, Kidd 1, sw nw ne 27-6n-10w	65	3523
Carter County—		
S & D Daube et al, Westheimer-Daube 21, nw ne se se 14-4s-3w	*	1492
Cleveland County—		
Hamilton et al, Meyers 1, swc ne 22-9n-2w	*	7609
Creek County—		
Crosbie, Wright 1, sec sw 17-17n-8e	*	2990
Dempsey, Marrs 1, ne nw se 29-18n-8e	48	2458
Garvin County—		
Starr O. & G. Co., Shi 1, nw ne ne 8-4n-3e	*	3115
Jackson County—		
Kerbow & Britton, Dora 2, ne sw se 11-1n-20w (otd 1389 ft)	6	1517
Gulf, Byrd 1, nwc 14-1n-20w (otd 1507 ft)	18	1709
Gulf, Enos 1, nw ne ne 16-1n-20w (otd 1545 ft)	104	1605
Kiowa County—		
Teci Prod. Co., Fowler 1, sec nw 10-7n-18w	*	1681
Latimer County—		
LeFlore G. & E. Co., Smallwood 34, nw ne se ne 1-6n-22e	¶2.0	1969
Lincoln County—		
Allied Materials, Smulian 1-A, ne se nw 2-13n-6e (pb 4175 ft)	*	4269
Logan County—		
H. & P. Gas Co., Matherson 1, swc 34-18n-4w	¶12	4865
Marshall County—		
Hewitt Mineral Trust, Adams 4, se sw se 31-7s-6e	20	555
Muskogee County—		
Pine, Cable 1, sw swc ne 16-14n-17e (otd 1424 ft)	5	1990

[*Continued on next page*]

A Source Book in Geology

By KIRTLEY F. MATHER, Professor of Geology, Harvard University, and SHIRLEY L. MASON, Geologist. 702 pages, illustrated $5.00

This new book gives a comprehensive view of the development of geological science during the last four centuries, by presenting the significant passages from writings of the great contributors to that science in the past.

The excerpts include portions of the work of 130 geologists, original statements of many important principles and theories thus being made available. Many of the excerpts are translated from Latin, French, German or Italian.

Send Orders to the

GULF PUBLISHING CO.

P. O. BOX 2811 HOUSTON, TEXAS

JUST AS YOU SEE IT HERE

"The Entirely Different Boiler and Engine Treatment"

You can hold a whole month's supply of Sand-Banum in the palm of your hand!

Ounces of Sand-Banum applied weekly keep your boilers and engines free of scale and corrosion. It's doing it for plant operators throughout the country. Consistent performance for 14 years is your assurance. **Write for the facts today.**

AMERICAN SAND-BANUM CO., Inc.

9 Rockefeller Plaza New York City

WESTERN SAND-BANUM CO.

Houston, Texas Fresno, Calif.

Export Representative, PETROLEUM MACHINERY CORP.

30 Rockefeller Plaza New York City

United States Well Completions—*Continued*

OKLAHOMA—Continued

Company, Well and Location	Init. Prod. Bbls.	Depth
Noble County—		
Phillips, Hackett 8, sec 21-23n-2w	1312	4325
Okfuskee County—		
Iglehart, Hilderbrant 1-A, ne nec nw 19-10n-11e	*	2176
Oklahoma County—		
Sinclair-Prairie, Stamper 10, se sw nw 30-11n-2w	35	4077
I. T. I. O., Trosper Park 30, se nw nw 13-11-3w (otd 6317 ft)	100	4108
Phillips, Ethel 1, se se ne nw 34-12n-3w	820	6574
Okmulgee County—		
Brady, Cornelius 1-A, ne sw sw 10-15n-11e	*	2927
Kirkland, Green 1, se se ne ne 24-15n-12e	25	1611
Pawnee County—		
I. T. I. O., Dunham 2, cs½ sw 27-20n-6e	12	2750
Reynolds, Ackley 2-A, se nw ne 14-20n-9e	5	1293
Watchorn, Miller 18, se nw sw 33-23n-3e	100	2695
Pontotoc County—		
Ramsey, McFarland 1, nec se 2-4n-7e	¶1	2602
Pine, Randall 5, ne nw nw 35-5n-4e	72	2535
Superior, Indian Royalty 2, nw ne nw 36-5n-4e (otd 2621 ft)	175	2662
Lloyd, Auten 1, se ne sw 36-5n-6e	*	1747
Pottawatomie County—		
Denver P. & R., Houck 4, ne sw sw 1-6n-4e	120	4269
Moore et al, West 1-A, nw se nw 26-6n-4e	*	2980
Kerlyn, School Land 1, nwc 16-7n-5e	¶10.0	3350
Seminole County—		
Carter, Hopper 3, ne se ne 19-9n-6e (otd 4215 ft)	33	4228
Winona, Barkus 3, nw ne se 18-7n-8e	60	4215
Clark & Cowden, Barnhart 1, sw nw sw 32-7n-8e	254	3100
Tillman County—		
Johnson, Longacre 1, ne se se 32-2s-17w	264	3262
Washita County—		
Continental, School Land 1, c ne 16-8n-16w	*	8000

Pennsylvania

BRADFORD DISTRICT

George Van Vechten & Son, Farr	3	....
Gordon Smith, Smith Estate	1	....
Penn Valley Crude Oil Corp., Fee	1	....
Forest Oil Corp., 2 wells	2	....
Forest Pet. Corp.	1	....
Niagara Oil Corp., 4 wells	4	....
Tapp, Gallets & Buffington, Tr, Fee	6	....
N. V. V. Franchot, Mgr., Tr. Franchot & Meridan	5	....
Bradford Transit Co., 16 wells	16	....
Water Intake Wells—		
Pine Run Oil Co., Bing 130-1-2-3-4-6, 2 wells	...	....
Messer Oil Corp., Loop	...	....
Forest Pet. Corp.	...	....
Niagara Oil Corp., 4 wells	...	....

MIDDLE DISTRICT

H. G. McCombs Sons et al, D. Perrine	1	....
Fryburg Motor Co., Peeples	⅝	....
Floyd A. & Wilbur F. Fleming, Fleming	3	....
Joseph Karl et al, Lot 106	4½	....

Texas Panhandle

Carson County—		
Gulf, Cooper 29	270	3112
Magnolia, Fee (Tr No. 244) 85	76	3095
Texas Co., Cooper 13	286	3200
Gray County—		
Amagray Oil Co., Bailey 1	10	2778
Bell O&G Co., Morse 7	138	2610
J. M. Huber Corp., Pritchard 1	¶10.8	3151
I.T.I.O. Co., Smith 15	308	3275
King Oil Co., Simpson 9	325	3285
Magnolia, Mertens 24-A	121	3065
Hutchinson County—		
Cree & Hoover, Haile 7	712	3019
Cree-Hoover & Dye, Harvey Sisters 5	350	3027
Harvey Sisters 6	450	3035
Gibson Oil Corp., Harvey Sisters 5	437	3015
Gulf & Panhandle, Dial 99	187	2953
Stanolind, Haile 20-B	177	3061
Watkins 12-B	377	2875
Texas Co., Garner 11-A	387	3050
Lewis 29	393	3020
Wheeler County—		
El Bar Corp., Noel-Texaco 16	184	2413
Gramps Oil Co., Sammons 1	¶22.6	2170

West Texas

Andrews County (Means)—		
Humble, Means 27	600	4544
Crane County (Gulf-McElroy) —		
Gulf, McElroy 222	1222	2931
Crane County (McCamey)—		
Texas Co., King 46	246	2364
Ector County (Foster)—		
Humble, Henderson 3-B	1062	4200
Stanolind, Witcher 43	1285	4110
Sunray Oil, Johnson 5-D	252	4148
Johnson-Landreth 1-E	336	4171
Ector County (Goldsmith)—		
Gulf, Goldsmith 298	891	4195
Goldsmith 299	185	4180
Goldsmith 301	682	4258
Ector County (North Cowden)—		
Barnsdall, Smith 13	1249	4210
Sun Oil, Wight 5-C	404	4210
Texas Co., Holt 2	861	4400
Gaines County (Seminole)—		
Amerada, Riley 5	904	5230
Gaines County (Wasson)—		
Amon Carter et al, Moore 7-45	1209	5046
Carl B. King et al, Brand 1-B	386	5012
Hockley County (Slaughter)—		
Awoeb Oil Co. et al, Davis 4-a	1203	5006
Howard County—		
Magnolia, Roberts 24	331	1408
Loving County (Wheat)—		
Fred Hyer et al, Russell 3	70	4322
Pecos County (Lehn)—		
W. E. Keeney et al, Lehn-Texaco 5	106	1725
Sahara Oil Corp.-R. G. Patillo, Sullivan 12-B	141	1707
Pecos County (Tobarg)—		
A. J. Rife et al, Tippett-Conoco 5	9	476
Pecos County (White-Baker)—		
Cardinal Oil Co., White-Baker 1-E	28	1829
Ward County—		
Edwards-Moore & Donnelly, Bertner 1	397	1880
Gulf, E. W. Estes 136	1105	2693
Hutchings 145	2890	2727
O'Brien 138	1668	2773
O'Brien 139	173	2685
Winkler County (Keystone)—		
Ralph Lowe et al, Campbell-Texaco 1	710	3283
Yoakum County (Wasson)—		
Aloco Oil Co., Moore-Texaco 4	821	5233
Elliott-Texaco 4	56	5251
Keller-Texaco 7	563	5165
Willard-Texaco 10-B	472	5232
Continental Oil Co., Stevens 5	1308	5124
Denver Prod. & Ref. Co., Whittenburg 19	1361	5120
Dunigan Bros.-Brahaney, Pharr 1	946	5250
Honolulu Oil Corp., Wilder 15-804	1407	5130
Humble, Bennett 7	1135	5245
Wooten 30	620	5124
Mabee O&G Co., Willard 1-D	1474	5185
Shell Oil Co., Baumgart 15-E	1637	5160

West Central Texas

Brown County—		
Cullison & Kynaston, Hill 1	7	1312
N. C. Jordan et al, Rice 1	*	1484
Wilson Oil Co., Armstrong 1	7	1540
Callahan County (Wildcat)—		
H. W. Lee et al, Harris 1	20	1229
Callahan County—		
W. D. Austin et al, Yarbrough 3	*	345
F. J. Borman et al, Harris 4	¶1.0	425
F. B. Hamlin et al, Wagley 1-A	*	313
J. W. Harris et al, Yarbrough 1	*	330
R. W. Richmond et al, George 1	*	702
Trumter Pet. Co., Taylor 1-A	*	741
Woodley Pet. Co., Hatchett 1-A	*	435
Coleman County—		
Bradford & Robertson, Gillespie 1	438	3578
States Oil Corp., Morris 3	242	3580
Comanche County—		
St. John & Choate, Roberts 7	3	654
Eastland County (Wildcat)—		
Jones-Stasney-Groover & Rose, McElreath 1	120	3035
Jones County—		
Hickok P&D Co.-Harry Reynolds, Dunlap 1	*	1725
Shackelford County—		
Roeser & Pendleton, Inc., Cook 15-B-113	74	1591
Cook 16-B-113	103	1588

East Texas

Kilgore Area—		
Harcher Oil Co., Crim 2-B (37/100-ac)	900	3553
Laird-Moses 3 (⅛-ac)	1200	3566
Houston Oil Co., Elder 4 (16.6-ac)	1500	3598
M. E. Moses et al, Moses-Laird 1	1200	3572
Longview Area—		
FHE Oil Co., Clements 5 (10-ac)	4500	3570
T. W. Lee et al, Bumpas 12 (31.6-ac)	2400	3555
Phillips & Lange, Colby 1	1500	3619
Anderson County (Cayuga)—		
Clark-Cowden Dr. Corp., Barton-Kirby 3	¶59.0	4097
Falls County (Wildcat)—		
City of Rosebud, Fee 1	*	3695
Franklin County (Talco)—		
Texas Co., Barker 16 (468.39-ac)	120	4279
Henderson County (Wildcat)—		
E. B. LaRue, Richards & Holloway, Davis 1	*	4546
Henderson County (Rowe-Baker)—		
A. J. Tyler & Smith, Rowe-Baker 3	†	2787
Red River County (Wildcat) —		
Joe B. White et al, Lodwick Lumber Co. 1	*	2139
Titus County (Talco)—		
Humble, Sallie Blalock 3	*	4388

North Texas

Archer County (Hull-Silk)—		
Chapman & McFarlin, Wilson 7-E (pb to 4633 ft, new pay)	972	5091
Dillard-White & Duncan, Nichols 8	1344	4411
Nichols 9	1224	4427
Gulf, Siegel 20	984	3782
Helmerich & Payne-Mazda, Finley 5	1296	4357
Bert Ligon et al, White 1-C	864	3910
Ed. Peterson & McCarty, Wilson 37-B	792	3761
Pet. Producers Co., Fern Johnson 2-A	1224	4390
Phillips Pet., Little 6	1229	4400
Thurmond & R. C. Lipscomb, Wilson 6 (pb to 3980 ft)	1032	4348
Archer County—		
L. T. Burns et al, Blewitt-1st Nat'l Bank 2	9	1473
Blewitt-1st Nat'l Bank 4	10	1476
Perkins 1-F	10	1456
E. C. Harlin Jr. et al' Powell 1	*	1300
Bert Ligon et al, White 4-C	10	468
White 5-C	*	980
White 6-C	35	969
Moran Bros., Inc., Carson 1-B	*	602
Peterson & McCarty, Wilson 38-B	3	565
Clay County—		
J. B. Cunningham et al, Big Wichita River 1	*	1237
T. A. Norwood et al, Taylor 6	240	1143
Taylor 7	264	1143
Clay County (Wildcats)—		
Akin-Dimock & Costley, Edrington 1-B	*	1457
L. O. McMillan et al, Watson 1	*	3760
Cooke County—		
Dodson & Powell, Lynn 1	75	1086
Cooke County (Wildcats)—		
J. D. Hancock et al, Alexander-Sun 1	*	2582
Montague County (Nocona)—		
L. A. Conner-W. H. Curry, Reed-Sunray 2	1184	4381
Montague County (Bonita)—		
Sinclair Prairie, Langford 1	*	5500
Throckmorton County (Wildcat)—		
Walter Neustadt et al, Brown 4	*	700
Wichita County (K-M-A)—		
W. H. Hammon et al, Fee 3	536	4034
Hammon-Hanlon & Buchanan, Fassett-Tuttle 21	408	4032
Hanlon & Buchanan, Fassett-Tuttle 32-G	368	4077
Shell & Phillips Pet., Griffin 10	400	3835
Wichita County—		
Guy J. Brown et al, George 1	*	1706
F. W. Merrick, Inc., Jones 7	6	590
Texas Co., Honaker 75-a	15	1064
Young County—		
T. A. Jirik et al, McBrayer 5	*	697
Chas. B. King et al, Dalley 4	5	561
Dalley 5	6	561
Trentman-Nunley et al, Guinn 5	474	2810
W. E. Production Co., Grubbs 4 (pb to 4431 ft)	250	4920
Henry Zweifel et al, Pistole 1	1215	4006
Vaughn 1-D	¶15.0	3826
Young County (Wildcat)—		
Tom Hughes et al, Casey 1	*	516

South Texas

CORPUS CHRISTI DISTRICT

Brooks County—		
H. G. Hansboro et al, Singer 1 (Alta Verde)	*	325
Humble, McGill Bros. 67 (Kelsey)	500	4723
Calhoun County—		
Coronado Corp., Welder et al 2 (wc), sec 9	*	6104
Jackson County—		
British American, Polifka 1 (Francitas)	500	7976
Humble, L. Ranch Co. 1-A (Lolita)	850	5945
Menefee Bayou-State B-1 (West Ranch)	950	5515
Magnolia, Four Way Ranch 1 (Lolita)	450	6399
West 84-A (West Ranch)	1150	5764
West 88-A (West Ranch)	750	5773
West 97-A (West Ranch)	450	5579
West 98-A (West Ranch)	500	6177
Renwar Oil Corp., Phillipi 4 (West Ranch)	1250	5772
S. W. Richardson, Clement et al 1, (wc), blk 21-A	*	8500

[*Continued on next page*]

United States Well Completions—*Continued*

Company, Well and Location	Init. Prod. Bbls.	Depth
SOUTH TEXAS—Continued		
Texas Co., Mauritz et al 1-B (Ganada)	850	5105
H. E. Williams, Montex Pet. Co. 1, (wc), lot 9, I&GN sur	*	6516
Jim Wells County—		
Anderson-Prichard, Mueller et al 4 (Wade City)	1000	4968
Rodney Delange & Earl Rowe, McNeill 2 (Wade City)	750	5316
H. H. Howell, Clara Driscoll 2 (wc), blk 8, 17 mi sw Alice	*	6423
Magnolia, Schmidt 2 (Orange Grove)	500	5112
W. C. McBride, Schroede 1 (Orange Grove)	450	5694
Republic Nat. Gas Co., Adams 1-B (Alfred)	500	4692
Live Oak County—		
Simmons Oil Co., McGriff 15-B (Oakville)	213	2138
Nueces County—		
Humble, Texas 1-B (wc) sur 706	*	6500
Fred W. Shield, Moore Est. 1 (wc) sur 143	500	6774
Henderson Coquat, Isensee 1 (wc) lot 10, 2 mi e Robstown	*	7505
Refugio County—		
Fech Oil Co., Zarsky 1 (La Rosa)	*	6505
Quintana Pet. Corp., Heard 37 (Tomoconnor)	1560	5925
Shield Oil Co., Sasse 6 (La Rosa)	375	5416
Victoria County—		
Gulf, Traylor 20-B (Heyser)	1100	5495
Houston Oil Co., Fagan et al 6 (McFaddin)	450	4409
Stanolind, Vandenberg and Hill 11 (East Placedo)	350	7278
LAREDO DISTRICT		
Duval County—		
G. W. Basom, Tr., Adami 2 (wc), sur 349	*	1326
Government Wells Oil Co., Lundell 4 (Piedre Lumbre)	78	1368
Magnolia, D.C.R.C. 47 (201) (Piedre Lumbre)	*	....
Well 18 (495) (Hoffman)	124	2659
Well 19 (495) (Hoffman)	*	2787
Milam Dr. Co. and Atlantic Ref. Co., de Valerio 1 (wc) sur 308	*	4860
W. L. Pickens et al, Perez (wc) sur 548	*	4520
Jim Hogg County—		
Walter Achning & Charles Daubert, Allen 2 (Manila)	*	2621½
Navarro Oil Co., Allen 1 (Manila)	200	26 6
Sun, Thaxton 5 (Colorado)	163	2966
Starr County—		
P. R. Rutherford & K. D. Owen, Standard Trust Co. et al 1 (Boyle)	*	3534
Webb County—		
W. H. Holland & Jay Simmons, Bruni Est. 6 (Glen)	96	2190
Bruni Est. 7 (Glen)	260	2190
Bruni Est. 8 (Glen)	384	2189
Magnolia, Benavides 11 (West Cole)	*	2368
Benavides 12 (West Cole)	*	2364
Volpe-Benavides 42 (Volpe)	*	2474
SAN ANTONIO DISTRICT		
Bexar County—		
Southwest Dr. Co., Covell 2 (Gas Ridge)	3	412
Joseph H. Turner et al, Brown 1 (wc), sur 357	*	4023
Frio County—		
Texas Atlas Oil Co., McWilliams Bros. and Cory 4 (Pearsall)	1325	5610
Gonzales County—		
Encino Prod. Co., Innoncenz Zavidil 1 (wc), Wm. Newman 26-Labor sur	*	3100
Guadalupe County—		
P. G. Rouse, Lenz 5 (Elm Creek)	*	1360
Kimble County—		
J. C. Renfro, Morales 1 (wc), sur 423	*	2000
Wilson County—		
E. E. Young et al, McMeans 1-A (wc), C. W. Parrott sur	*	2185

Texas Gulf Coast

Company, Well and Location	Init. Prod. Bbls.	Depth
Big Creek—		
Hatton, Cockrell 2	10	1042
Clear Lake—		
Humble, West Fee C-43	*	6060
Hardin—		
Humble, Partlow 17	288	7656
Hull—		
Guinn, Abel 17	75	2310
Lovell's Lake—		
Humble, Faylor 3	312	7727
Old Ocean—		
Harrison & Abercrombie, Daily-Hughes 1	414	10,254
Port Neches—		
Texas, Polk B-7	118	5730
Segno—		
Gulf, Wing 36	171	8127
Humble, Kirby 25-B	192	8150
Jordan, Hughes 3	408	7500
South Cotton Lake—		
Humble, Lawrence 4	¶	6509
Salt Dome, Williams 2	*	6516
Spurger—		
Republic, Hurd 39	290	7708
Thompson—		
Gulf, Scanlan 2	906	7849
Wolters 17-B	583	5410
Loffland, State 2 (river bed)	930	7903
West Orange—		
Merrick, Norwood 1	*	6035
Harris County—		
Fraziers, Johnson 1, Mt. Houston area	*	8515

*Failures; †Junked; ¶Million cu. ft. gas.

Michigan Lease Sale

Wildcat leases on 16,005 acres of Michigan state-owned land sold August 5 brought an average of 10.8 cents per acre. Highest bid was made by The Ohio Oil Company, $2.62 an acre for an 80-acre least in Roscommon County.

Reduce Satsuma Allowable

The proration schedule issued by the Texas Railroad Commission last week reduced the allowable in the Satsuma field, Harris County, by 67 barrels for the 11 wells in the field. The new field allowable is 345 barrels daily.

PETROLEUM PRODUCTION ENGINEERING

By LESTER C. UREN

Professor of Petroleum Engineering

University of California

VOL. I—Oil Field Development. New Second Edition, thoroughly revised and enlarged. Chapter Headings: Properties, Occurrence and Associations of Petroleum; Petroleum Exploration Methods; Acquisition of Title to Oil Lands; Developing the Field; Drilling Equipment and Methods; Churn Drilling Equipment and Methods; Rotary Drilling Equipment and Methods; Casing, Casing Appliances and Casing Methods; Fishing Tools and Methods; Oilfield Hydrology; Exclusion of Water from Wells; Finishing the Well; Well Records.

531 pages, 6 x 9, 258 illustrations. Price..... $5.00

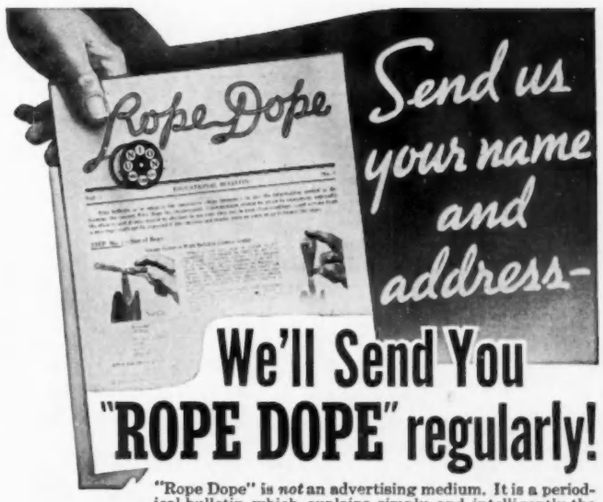
VOL. II—Oilfield Exploitation. Here are up-to-the-minute data on how to drain petroleum from its reservoir rocks, how to bring it to the surface and prepare it for shipment, how to care for and remove impurities from the crude petroleum, how to design, construct and operate pipe lines. The book is based on the author's contacts with all the important oil-producing regions of the United States.

741 pages, illustrated. Price..... $6.00

Send orders to

The Gulf Publishing Company

P.O. Drawer 2811 **Houston, Texas**



We'll Send You "ROPE DOPE" regularly!

"Rope Dope" is *not* an advertising medium. It is a periodical bulletin which explains simply and intelligently the highly technical phases of Wire Rope—its applications and uses . . . There's no obligation on your part—but a lot of valuable information in store for you.

WIRE—WRITE—or consult your Telephone Directory.

UNION WIRE ROPE CORPORATION
2104 Manchester Ave. Kansas City, Mo.

UNION Wire Ropes

The "ULTIMATE LOW COST WIRE ROPE"

B

WILDCAT REPORT
New Starts and Completions

William M. Barret, Inc.
Consulting Geophysicists
Specializing in Magnetic Surveys
Contracts accepted for domestic and foreign projects, using the most improved instrumental and interpretative technique.
GIDDENS-LANE BUILDING
SHREVEPORT, LOUISIANA

THE FORT WORTH LABORATORIES
Analysis of oil field brines, cores, gas, oil, and minerals. Field gas testing. R. H. Fash, Vice-President; Long Distance 138. 828½ Monroe Street, Fort Worth, Texas.

HOUSTON LABORATORIES
Analytical and Consulting Chemist
Podbielniak Gas Analysis
Oil Field Brines, Waters and Cores
Complete Evaluation of Crude Oils
Long Distance 267, Box 132, Houston, Texas

PATENTS
Patents, Trade Marks, Copyrights and Infringement Litigation
HARDWAY & CATHEY
428-29-30 Bankers Mortgage Bldg.
Phone Capitol 9756 Houston, Texas

The Firm of
JACK A. SCHLEY
ATTORNEYS AT LAW
PATENTS - INFRINGEMENTS - OPINIONS
1801-3 Commerce Bldg. — Houston
1807-11 Tower Petroleum Bldg. — Dallas
San Antonio — Washington, D. C.

Shilstone Testing Laboratory, Inc.
Chemical Analyses
Oil, Water, Gas, Etc.
Boiler Water Treatment
Physical Test & Inspection
Houston San Antonio New Orleans
30 Years Experience

HOARD EXPLORATION CO.
Seismic Surveys
Consulting Service Available
618 Esperson Building
HOUSTON, TEXAS

WANTED: Manufacturer of Oil field surface equipment wants aggressive sales representative. Must have good selling record and general knowledge of jobber-supply store field operations. Real opportunity for right man. First letter must give complete business history, references, age and salary expected.
Box 668, c/o The Oil Weekly Houston, Texas

CALIFORNIA

FIRST REPORTS

Fresno County—Texas Co.'s Everding 1, sec 24-17-15, grading lcn, Cantua Creek area.
Kern County—Red Rock Co.'s Red Rock 1, sec 13-30-37, dr 250 ft, Cantil area.
Ventura County—Reek Elkins' No. 1, sec 5-3-19, dr 375 ft, Bardsdale area.

KANSAS

FIRST REPORTS

Butler County—Scott-Carey Oil Co.'s Pettit 1, swc 15-28-6e, mim.
Cowley County—Continental's Breon 1, cel sw se 4-35-4e, lcn.
Shawnee County—Corbett et al's Security Benefit 1, csl nw 28-11-15e, lcn.
Stafford County—Shell et al's Riley 1, swc 28-23-11w, dr.

COMPLETIONS

Jefferson County—McLaughlin et al's Frazier 1, csw ne 22-9-18e, 15 mi nw Oskaloosa pool, hfw 1760 ft, abnd 1788 ft.
Rooks County—Mitchell Dr. Co. et al's Veverka 1, cs½ se se 21-8-19w, ¾-mi se abnd Webster pool, Arbuckle 3428 ft, pay 3434-35 ft, 2000 gals acid, 1700 gals butane, 1418 bbls, 20-gr.

SOUTH LOUISIANA

COMPLETIONS

Iberville Parish—Falcon-Seaboard Dr. Co.'s Folse 1, Samstown area, abnd 11,502 ft, no shows.
Vermilion Parish—Union Oil Co. of Calif.'s White Hrs 1, sec 17-15s-1e, discovery Schooner Bayou, td 11,098 ft, perf 10,536-042 ft, flowed 226 bbls 30-gr oil daily, ¼-inch choke, tubing pressure 3600 lbs.

NORTH LOUISIANA

FIRST REPORT

DeSoto Parish—Union Prod. Co.'s Garrett B-1, 32-12n-16w, rig.

MICHIGAN

FIRST REPORTS

Barry County—K. A. Fox's Winchester 1, nw sw sw 23-2n-9w, dr.
Isabella County—Stewart Oil Co.'s Weidman 1, 11-15n-3w, rig.
Lenawee County—N. J. Berston's Heath 1, se se se 13-7s-5e, lcn.
Ottawa County—Bell-Marks, Inc.'s Grasmeyer 1, se se nw 25-6n-14w, rig, Fisher & McCall, Inc.'s Van Single 1, nw ne nw 2-6n-13w, rig.
St. Clair County—C. J. Farley's Walker 1, ne se nw 26-7n-16e, rig.
Montcalm County—Smith Pet. Co.'s Chapin 1, nw nw 14-11n-7w, mim.

COMPLETIONS

Allegan County—A. E. Kopprasch's DeWeerdt 1, sw sw ne 14-4n-15w, Traverse 1600 ft, abnd 1838 ft.
Macomb County—Lenawee O&G Co.'s McCarberry 1, nw ne nw 36-5s-5e, Trenton 2450 ft, abnd 2520 ft.
Missaukee County—D. E. Hughes Heeringa 1, ce½ se se 21-21n-8w, Monroe 3996 ft, abnd 4015 ft.
Oakland County—Wicklund Dev. Co.'s Dhroner 1, ne se sw 2-4n-8e, abnd 1642 ft.
Van Buren County—W. Spencer Cook's Ray 1, sw ne nw 35-1s-13w, Traverse 1302 ft, abnd 1305 ft.

MISSISSIPPI

FIRST REPORT

Jefferson Davis County—Exchange Oil Co.'s Newman Lbr. Co. 1, 36-7n-19w, dk.

MISSOURI

FIRST REPORT

Caldwell County—O. M. Evans et al's Arnote 1, sw ne sw 25-55n-29w, est 2,500,000 ft gas, td 400 ft, testing.

NEBRASKA

FIRST REPORTS

Nemaha County—Engles et al's Wheeler 1, nec 9-4n-14e, mch.
Richardson County—Lewis et al's Wittwer 1, nwc ne 22-1n-14e, rur.

COMPLETIONS

Bluff County—Wood et al's McHenry 1, se ne ne 33-23n-57w, abnd 1209 ft. J. A. Fairy Pet. Corp.'s McCulley 1, c se se 35-23n-58w, sso 1495-1500 ft, sso 1515 ft, 6-inch at 2035 ft, abnd 2100 ft in Pierre sh.

NEW MEXICO

FIRST REPORTS

Eddy County—Black and Ratliff's Simmons 1, cse nw 9-21s-25e, dr 105 ft. A. & M. Pet. Co.'s State 2, nwc se 15-21s-27e, dr 110 ft.
Lea County—Great Western Producers, Inc., et al's State 1-D, se se 30-12s-32e, twin to Weiner & Stogner's 1373-ft jkd hole, rur.

COMPLETIONS

Eddy County—Martin Yates, Jr., et al's McCall 1, se sw sw 24-18s-26e, elev 3297 ft, sand pay 1022-32 ft, shot 60 qts nitro 1017-32 ft, flowed 96 bbls initial ⅛-in choke.
Lea County—Gulf's Drinkard 1, cnw se 25-22s-37e, elev 3317 ft, anhydrite 1120 ft, salt 1210-2366 ft, brown lime 2465 ft, abnd 4500 ft.

OKLAHOMA

FIRST REPORTS

Cotton County—Mohican Dr. Co.'s Boydstein 1, nwc ne 9-5s-9w, dr.
Pawnee County—Portable Dr. Co.'s Messer 1, sec nw 31-23n-5e, lcn.
Payne County—Wood Oil Co. et al's Krolop 1, swc se 14-17n-5e, dr.
Tillman County—Staley & Hawkins et al's Taylor 1, swc 9-2s-15w, rig.

COMPLETIONS

Tillman County—F. W. Johnson's Longacre 1, ne se se 32-2s-17w, s Frederick pool, perf csg 3243-47 ft, td 3263 ft, 90 bbls 40-gr oil and 70 bbls water.
Washita County—Continental's School Land 1, cne 16-8n-16w, 10 mi n Gotebo area, first Granite wash 3005 ft, abnd 8000 ft in Granite wash.

EAST TEXAS

FIRST REPORTS

Bowie County—Lee Timberlanke and Frank Rowe's Smith 1, T. H. Hill sur, 1 mi s Old Boston, lcn.
Falls County—Jay Carruth et al's Westbrook 1, blk 78, J. A. Manchaca sur, 3½ mi ne Chilton, rig.
Limestone County—Frank Bryant et al's Beville-Ramey 1, J. A. Murray sur, 1 mi sw Horn Hill, lcn for Travis Peak test.
Morris County—C. B. Zuber et al's Connor Bros. 1, Noah Smithwich sur, 5½ mi sw Daingerfield, rur for Woodbine test.
Navarro County—A. J. Willis et al's Cheney Est. 1, 31½-ac tr, W. Reed sur, 12 mi se Corsicana, lcn.

COMPLETIONS

Falls County—City of Rosebud's Fee 1, W. Gilmore sur, elev 500 ft, Georgetown 1358 ft, Edwards 1520 ft, Trinity 3335 ft, td 3695 ft, completed as water well.
Henderson County—E. B. LaRue, Richards & Holloway's Davis 1, E. G. Harris sur, elev 534 ft, Austin chalk 3605-4016 ft, Woodbine series 4494 ft, sand 4515 ft, abnd 4546 ft.
Red River County—Joe B. White et al's Lodwick (Kurth) Lumber Co. 1, Eliza Smith sur, elev 410 ft, Georgetown lime 540 ft, Paluxy 900 ft, massive anhydrite 1560-1620 ft, abnd 2139 ft.

WEST CENTRAL TEXAS

FIRST REPORTS

Coleman County—Robt. McKissick et al's Sealy & Smith 1, GH&H sec 175, blk 2, rur. M. R. Stuard et al's Minear 1, 369-ac tr, E. Votaw sur 244, lcn.
Eastland County—L. M. White et al's White 1, 520-ac tr, H. Kendrick subd 2, lcn.

COMPLETIONS

Callahan County—H. W. Lee et al's Harris 1, sw nw sw BBB&C sec 99, shot 7 qts nitro in sand 1219-29 ft, pumped 20 bbls initial.
Eastland County—Jones-Stasney-Groover & Rose's McElreath 1, csw H&TC sec 104, blk 3, elev 1641 ft, Caddo pay 2963-3035 ft, used 4000 gals acid, flowed 120 bbls initial.

WEST TEXAS

FIRST REPORTS

Dawson County—Magnolia's Sandidge 1, nec sw E. L. Ry. sec 110, blk M, mim.
Runnels County—A. J. Johnson et al's Fletcher 1, E. W. Bull sur 333, lcn.
Upton County—J. W. Ellis et al's Burleson 1, H&TC sec 65, blk 35, sp.

NORTH TEXAS

FIRST REPORTS

Baylor County—Roy I. Carter, Jack Prince et al's Farmer 1, TE&L sec 3126, rur.
Clay County—Akin-Dimock & Costley's Edrington 1-C, C. H. Stearne sur A-872, rur.

L. W. Stanford et al's Jones 1, MEP&P sur A-350, lcn.

Jack County—Allard Smith et al's Power 1, M. Hunt sur A-298, testing os 384-96 ft.

Wise County—Britt Cranfill-C, E. Rodgers et al's McKay 1, sec 8, Falls County School Lands, 2 mi w Park Springs, sp on 7500-ft test.

Young County—Hill & Hill's Stewart 1, TE&L sec 1493, lcn.

COMPLETIONS

Clay County—Akin-Dimock & Costley's Edrington 1-B, C. H. Stearne sur A-872, abnd 1457 ft. L. O. McMillan et al's Watson 1, TE&L sec 2620, Strawn series 2810 ft, abnd 3760 ft.

Cooke County—Jas. D. Hancock et al's Alexander-Sun 1, 80-ac tr, John Woods sur, A-1140, abnd in Ellenburger 2582 ft.

Throckmorton County—Walter Neustadt et al's Brown 4, sw nw TE&L sec 1608, abnd 700 ft.

Young County—Tom Hughes et al's Casey 1, TE&L sec 1906, abnd 516 ft.

TEXAS GULF COAST

FIRST REPORTS

Brazoria County—Juanita Oil Co.'s Rogers 1, Charles Garrett No. 13 Survey, lcn 5700-ft test.

Chambers County—Standard of Texas-Salt Dome's State 1-66, Galveston Bay, Fisher's Reef, 12 mi sw Anahuac, 1½ mi se same operators' State 1-54, lcn 9500-ft test.

Galveston County—Continental's Davis 1, South Clear Lake, blk 2, Lakeside Addition, M. Muldoon Survey, 2½ mi ne League City, lcn 10,500-ft Frio test.

Harris County—Frazier's Griffith 3, blk 28 Houston Suburban Heights Subdivision, A. Smith Survey, Mt. Houston, lcn 4200-ft test.

Jefferson County—Hall Jordan Oil Co.'s State 1-72, Gulf of Mexico, Sabine Pass, 50 ft from Harwell's State 1, digging pits.

Orange County—Dick Schwab's Brown Stark Lbr. Co. 1, Section 23, T&NO Survey, Abstract 197, lcn 6500-ft test.

COMPLETIONS

Harris County—J. Frazier's Johnson 1, lot 8-A, blk 15, Houston Suburban Heights Subd, W. Britton Survey, dst 3510-24 ft rec'd sw with oil, Disc 3729 ft, Het 3991 ft, Warr 5874 ft, Hock 6757 ft, Cock 7755 ft, Oper 8025 ft, ran elec log, abnd 8515 ft.

SOUTH TEXAS

FIRST REPORTS

Aransas County—Gulfboard Oil Corp.'s State 1, 320-ac lse, Texas Tr 239, Aransas Bay, 6 mi se Rockport, lcn.

Bastrop County—Fritz Fuchs' Kerksey 1, 75-ac tr, G. J. Glasscock sur, 1 mi e Elgin, ru.

Bexar County—C. G. Bigby's Winter 1, 80-ac tr, Francisco Rodriguez sur, dr 1820 ft.

Jackson County—C. G. Glasscock's Walker 1, 50-ac lse, George H. Ewing league, ab 20, 1 mi sw Lolita fld, lcn.

Jim Wells County—O. W. Killam's Wade 10, lot 6, blk 10, W. H. Bode subd C, 2640 ft se Wade 9, lcn.

Live Oak County—Harry Hotchkin and Humphries' Holmes 1, 328-ac tr, Brigidet Haughy sur, 4 mi n Three Rivers, lcn.

McMullen County—H. A. Baker's Sparkman 1, sec 21, Two Rivers Ranch subd, 93-ac lse, dr 918 ft.

Nueces County—A. D. Corgey's Gallagher 1, 250-ac, J. M. Gallagher sur 320 and City of San Antonio sur 158, 5 mi se Clarkwood, 8720 ft se Baldwin fld, 3710 ft nw Alamo Dr. Co.'s Guaranty Title & Trust Co. 1, ru.

Webb County—Glenda Oil Co.'s Saldivar 1-A, blk 5, Eugene Garner subd 1, sur 657, J. V. Borrego gr, dr 500 ft. Muckleroy and Hiram E. Hall's Slator 1, blk 46, sec 93, Hiram E. Hall subd, Slator ranch, J. V. Borrego gr, lcn.

COMPLETIONS

Bexar County—Joseph H. Turner et al's Brown 1, T. H. Hobbs sur 357, 16 mi s San Antonio, Edwards 4011 ft, abnd 4023 ft.

Calhoun County—Coronado Corp.'s Welder 2, blk E, Eusebio Hidalgo gr, abnd 6104 ft.

Duval County—G. W. Basom, Tr.'s Adami 2, J. H. Gibson sur 349, 896-ac tr, 3 mi s Adami fld, 20 mi nw Freer, abnd 1326 ft. Milam Dr. Co. and Atlantic Ref. Co.'s Valerio 1, 145.2-ac tr, Joseph F. Mount sur 308, 11 mi w San Diego, 8700 ft sw Muralla fld, Sun farmout, abnd 4860 ft, W. L. Pickens et al's Perez 1, sur 548, 31-ac tr, 11 mi nw San Diego, 1½ mi nw Muralla fld, abnd 4520 ft.

Gonzales County—Encino Prod. Co.'s Zavidil 1, 195-ac tr, William Newman 26-Labor sur, ab 362, abnd 3100 ft.

Jackson County—S. W. Richardson's Clement 1, blk 21-A, R. F. Clement subd, Stephen F. Austin 2-League gr, ab 5, 2 mi nw Lolita, 1430 ft e Navidad River, abnd 8500 ft. H. E. Williams' Montex Pet. Co. 1, lot 9, C. S. Woolfolk subd, I & G N sur 70, ab 132, 143.03-ac tr, Sun farmout, 5 mi ne Lolita, 2½ mi w Barnsdall's Pritchett 1, abnd 6516 ft.

Jim Wells County—H. H. Howell's Driscoll 2, blk 8, H. H. Howell subd, Clara Driscoll Lands, La Arima Selo gr, 17 mi sw Alice, 7700 ft sw No. 1, abnd 6423 ft.

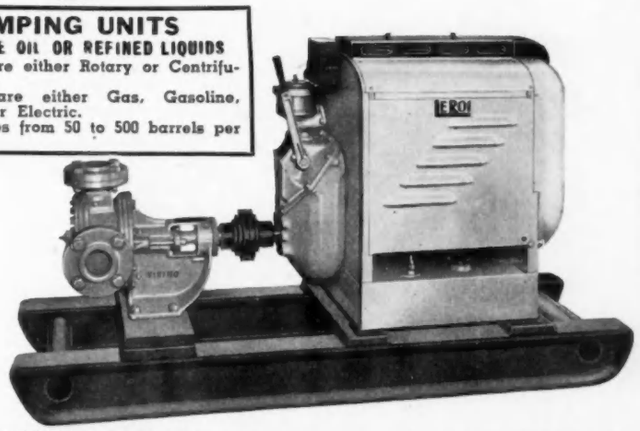
Kimble County—J. C. Renfro's Morales 1, H. Grate sur 423, 11 mi nw Junction, abnd 2000 ft.

Nueces County—Humble's State 1-B, E. L. Dennis sur 706, 785.47-ac tr, 1867 ft w State 1, junked 6500 ft. Fred W. Shield's Moore 1, Deiores I & A Co. sur 143, blk 4, Braniger Bros. subd, Clarkson ranch, 6 mi sw Clarkwood, 3 mi sw Baldwin fld, sd 6603-57 ft, 5½-inch csg 6774 ft, td 6774 ft, flowed 135 bbls, ⅛-inch ch, perf 6622-26 ft, 44.3-gr. Henderson Coquat's Isensee 1, lot 10, George H. Paul's subd D, Robert Driscoll Ranch, Gregorio Farias gr A-592, 1½ mi e Richardson, 2 mi e Robstown, Humble farmout, abnd 7505 ft.

Wilson County—E. E. Young et al's McMeans 1-A, 67-ac tr, C. W. Parrott sur, 4 mi n Stockdale, 45 ft se No. 1, abnd 2185 ft.

SOUTHERN

PUMPING UNITS
FOR CRUDE OIL OR REFINED LIQUIDS
- Pumps are either Rotary or Centrifugal.
- Motors are either Gas, Gasoline, Diesel, or Electric.
- Capacities from 50 to 500 barrels per hour.



SOUTHERN ENGINE & PUMP COMPANY
HOUSTON, DALLAS & KILGORE, TEXAS

Vacation in Ft. Worth

SWIM . . . yes, to your physical delight, in the cooling waters of 15 mile Lake Worth. Speed boating, sail boating and fishing, too. Amusements at the Casino.

DANCE . . . to the brass and strings of world famous bands at the cool pleasure spots in Metropolitan Fort Worth. Here's exciting fun for every one.

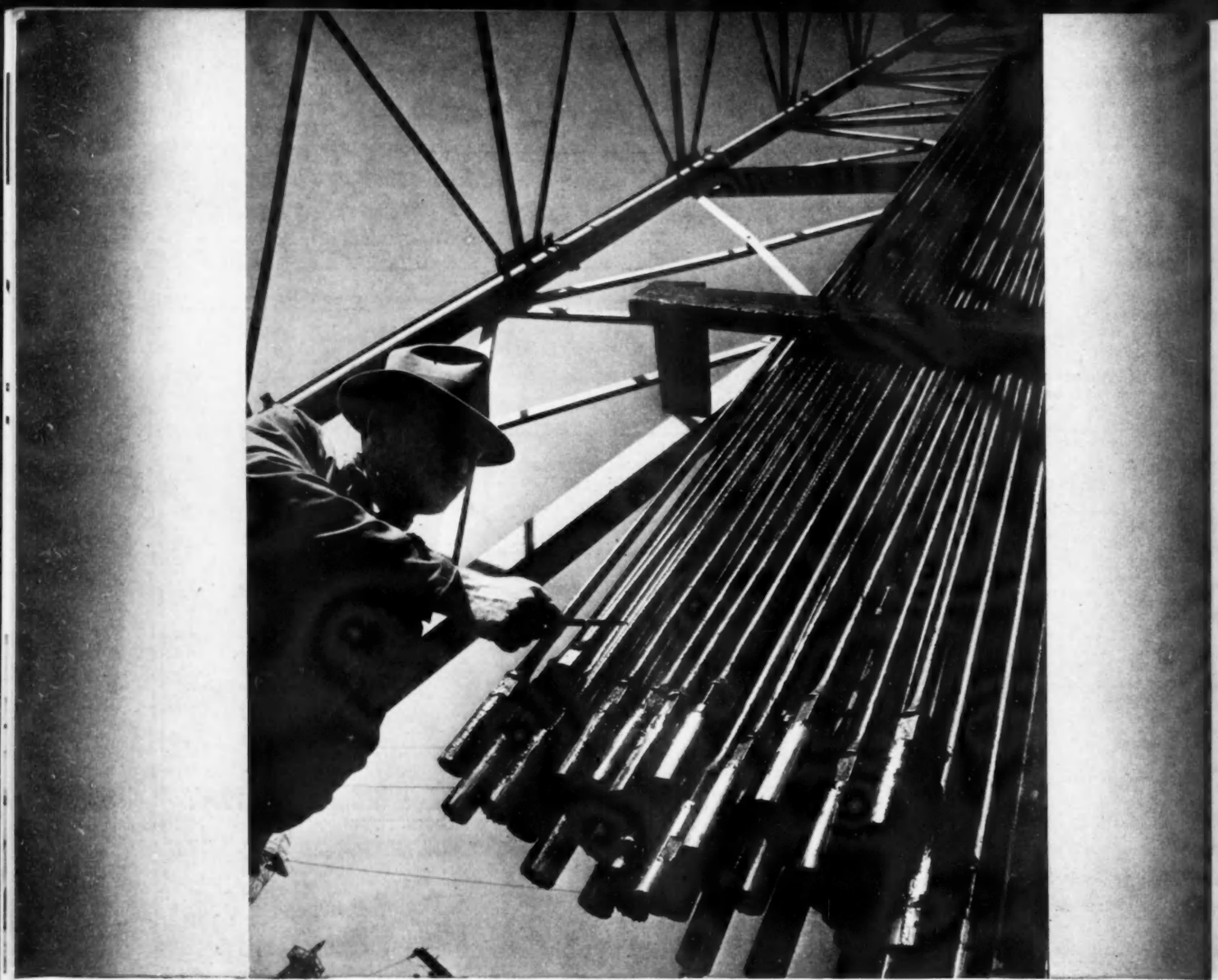
GOLF . . . on the greens of rolling courses. Be it par or below you'll find new adventure at every tee. Guest cards to guests of the Worth.

PICNIC . . . in the parks, on the shores of Lake Worth . . . at Inspiration Point. Our catering department will prepare the choicest of baskets for you.

ENJOY LIFE . . . at the WORTH HOTEL. Right on the Broadway of America . . . West Seventh at Taylor. Near all theatres and down-town shopping.

JACK FERRELL, Manager

The WORTH HOTEL
FORT WORTH
GRACIOUS HOST TO THE HEART OF THE WEST



COUPLING UP FOR KEEPS

What with constant abrasion against the sides of the tube and heavy reversing loads, not to mention corrosive conditions if it's a sour well, sucker rod couplings catch plenty of punishment. And their length of life has a decided influence on lifting costs.

Couplings made of carburized Nickel-Molybdenum (SAE 4615) steel are proving in actual use to have the qualities necessary for long service under the exacting conditions.

The steel takes a very hard, wear-resistant case and develops a strong, tough core. Both fatigue and corrosion fatigue resistance are high. The use of this steel results in couplings that can be counted on to hold pumping strings together so effectively as to effect a worthwhile saving in maintenance costs.

The service SAE 4615 is rendering in sucker rod couplings is characteristic of that of Molybdenum steels in many pumping and drilling equipment applications. Our free book, "Molybdenum Steels in Oil Production," gives complete, practical data.

PRODUCERS OF MOLYBDENUM BRIQUETTES, FERRO-MOLYBDENUM, AND CALCIUM MOLYBDATE

Climax Mo-lyb-den-um Company
500 Fifth Avenue · New York City

MOLY

NOTES FOR THE Equipment Buyer and User

Pumping Unit
BETHLEHEM SUPPLY COMPANY

A new line of pumping units with A.P.I. ratings ranging from 5- to 35-horsepower has been announced by Bethlehem Supply Company, Tulsa.

The units have welded frame work, but no welds are made at critically stressed sections on the walking beams. All bolts are locked with double nuts, and Samson posts are removable on the larger models. On the larger units, the horse heads have self-aligning ball-and-socket connections to walking beams while the equalizer assembly features a double tapered equalizing bearing to provide equalization of twin pitman loads.

Bethlehem Supply's Pumping Unit

Adjustment of stroke lengths on the smaller units is obtained by moving equalizer assembly along the walking beam, while the stroke-lengths for the larger units are controlled at the cranks.

Large-diameter shafts have been provided to assure long life of the gears, shafts and bearings by minimizing deflection.

Upper half of the gear case has troughs along the sides into which oil is diverted from the gears by means of wipers. From the troughs, the oil is introduced into the outer portion of the bearings of all shafts from where it flows back through the bearings and is returned to the lower case. A settling chamber in the lower half of the case separates out water condensation or foreign matter.

Rubber-mounted connections have been incorporated at the equalizer on the 5- and 7-horsepower units for protection from sudden well shocks or impulses. Both up and down movements of the walking beam are rubber-cushioned.

Counterbalancing is of the beam-balance type for the smaller units, while full rotary balance is employed on the larger units. The 10-horsepower unit uses a combination of both types of counterbalance. Weights are added or removed on full rotary balance type units, by loosening crack bolts to release interlocking lugs on the leaf weights.

Except in the gear reducer, pressure lubrication is used throughout. Tail bearings, beam-hanger bearings and saddle bearings are centrally lubricated from the top of the Samson post.

Pump Bearing
PEERLESS PUMP COMPANY

A water-lubricated bearing for use in deep-well vertical pumps, made by applying electrolytically-deposited chromium over a monel stainless sleeve that has been swedged into a vertical pump shaft, has been announced by Peerless Pump Company, 301 West Avenue 26, Los Angeles.

The pump shaft is armored with heavy chromium over a non-corrosive metal sleeve every 10 feet. These sections of the shaft operate within resilient cutless rubber journals, which are fluted and non-revolvable. The bearing is designed so that the hardness and thickness of the chrome and its bearing contact with cutless rubber prevents abrasion as sand in the water flushes through the bearing.

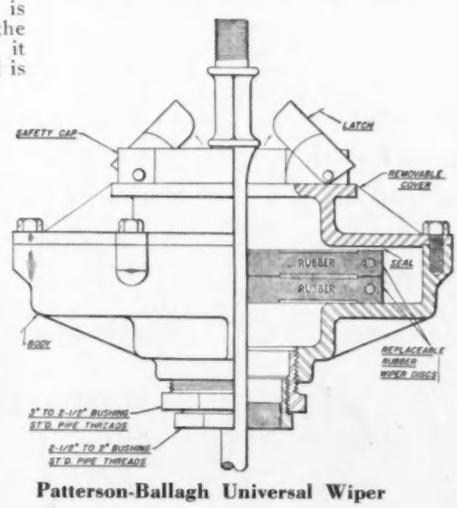
Sucker Rod Wiper
PATTERSON-BALLAGH CORPORATION

A sucker rod wiper, designated Universal and designed to accommodate all sizes of sucker rods without change of rubber or housing, has been announced by Patterson-Ballagh Corporation, Los Angeles.

Operating in a manner similar to the company's pipe wiper, twin discs of reinforced rubber float in a steel housing, allowing the rods to move back and forth. The design permits couplings on the rod and the pump or working barrels to pass freely through the discs without injury.

Discs are replaced by removing the cover, and a pair of latches provided that are normally closed except when the couplings pass through. Should the rod drop, the latches are designed to prevent their dropping into the well by catching the couplings.

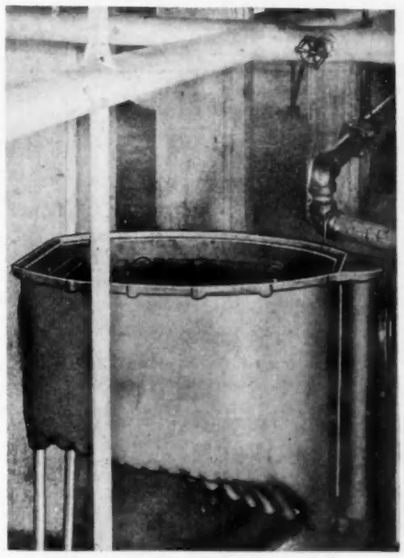
The wiper has a height of less than 7 inches to the outlet. A 2-, 2½- and 3-inch standard pipe bushing assembly and a set of wiping discs are included with the wiper. Rods from ⅝- to 1¼-inch on the same string are accommodated by the device.



Patterson-Ballagh Universal Wiper

Waste Reclaimer
GALE OIL SEPARATOR COMPANY

A waste reclaimer and conditioner, designed for gravity operation without moving parts and for removing liquid or solid particles from liquid waste, has been introduced by Gale Oil Separator Company, Chrysler Building, New York.



Gale Conditioner

It is constructed to permit flowing the liquid mixture to be treated beneath a quiescent body of fluid, with the continual submergence causing the breaking up of the mixture so that the lighter liquids, separated oils and oily or other substances automatically rise to the surface.

The conditioner can be cleaned while operating by means of a clean-out pipe at the bottom beneath the outlet pipe. A draw-off valve is adjustable to reclaim oils, oily substances or greases. It is available in 9 standard sizes from 18 to 1500 gallons per minute, and larger units are built on specification. Construction is of either sheet steel with cast iron rugae bottom, or entirely of cast iron.

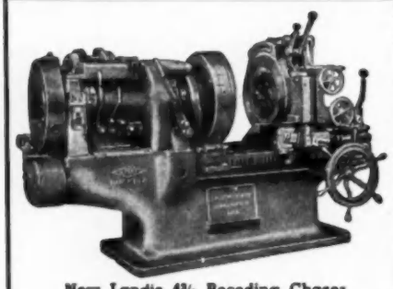
Axelson Manufacturing Company Holds Eleventh Annual Picnic

The eleventh annual picnic for employes of Axelson Manufacturing Company was held July 27 at Montebello, California, with over 1500 employes

CORE AND SHOT HOLE DRILLING CONTRACTORS

"For Better Cores" . . . see Failing . . . Experienced operators and improved equipment save you money on all types of exploration drilling . . . oil, sulphur, and other minerals.

FAILING EXPLORATION & DRILLING CORPORATION
3611 CALHOUN ROAD
HOUSTON, TEXAS



New Landis 4¾ Receding Chaser Pipe Threading Machine

COMPLETE LINES

Machine Tools—Metal Working Machinery—Bolt and Pipe Threading Machines—Electric Arc Spot and Butt Welders—Hand Power and Electric Traveling Cranes—Foundry and Forge Shop Equipment.

C. J. HARTER, Machinery
4000 CLAY, HOUSTON, TEXAS
Fairfax 1466

LO-VIS CRYSTALS

CHEMICAL DRILLING MUD THINNER

—ECONOMICAL AND EFFICIENT
—QUICKLY DISSOLVED IN WATER
—READILY ADJUSTS THE VISCOSITY OF DRILLING MUD.

For information, communicate with the manufacturer, or consult your nearest supply company handling Lo-Vis Crystals.

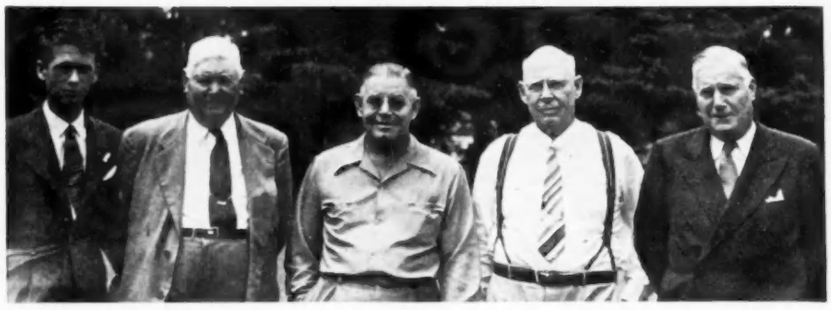
Mudrite Chemicals, Incorporated
139 Heights Boulevard
HOUSTON, TEXAS
P. O. Box 1013

OIL BOOKS

The knowledge gained through years of work and study by some of the most capable men in the oil industry is set down in the various oil books published and sold by the Gulf Publishing Company. Catalog of these books furnished upon request.

THE GULF PUBLISHING COMPANY
P. O. Box 2811 Houston, Texas

NOTES FOR THE Equipment Buyer and User



Three generations of the Axelson family are represented in this picture taken during Axelson Manufacturing Company's annual picnic recently. Left to right, Jack Axelson; C. F. Axelson, retired; J. C. Axelson, company president; G. A. Axelson, board chairman, and D. F. Axelson, vice president.

and their families in attendance. Games for young and old occupied the attention of those attending from 8:30 in the morning until 5:30 in the afternoon, while dancing held most of the crowd until 11 at night. This year's picnic was the largest and best attended to date.

Durham Takes Distribution of Corona Products in Houston Area

W. J. Durham, for seven years in the sales department of Earthen Products Company, Houston, has resigned to take over distribution of products of Corona Products, Inc., Rogers, Arkansas, in the Houston territory.

The company's line includes Opalite drilling mud, Opalite Admix and waterproofing material for concrete, sands for foundry purposes, and other silica products.

Phelps Named Houston Manager For Web Wilson Oil Tools

Web Wilson Oil Tools, Huntington Park, California, is now represented in Houston by Merrick W. Phelps, with offices at 1517 Esperson Building. Phelps was formerly store manager for Oil Well Supply Company at Houston.

MERRICK W. PHELPS

Valves

Merco Nordstrom Valve Company, 400 Lexington Avenue, Pittsburgh, has issued Bulletin V-132, giving detailed cross-sectional views of various types of valves for oil and gas field services. It is illustrated with 100 photos of lubricated plug valve applications in drilling and production, and includes operating data regarding each type of valve and descriptive material of manufacturing processes.

Chain Belt Transfers Screw Conveyor Division to Milwaukee

Chain Belt Company, Milwaukee, has completed moving manufacturing operations of its screw conveyor and light steel bucket divisions from its Chicago plant to its West Milwaukee works. The manufacturing operations of the division have been located in Chicago since the company entered this business in 1938, and operations were removed to West Milwaukee in order to centralize production and promote better customer service on these products.

A. B. Nixon Elected Hercules Vice President

Resignation of G. G. Rheuby, vice president and director of Hercules Powder Company, from the executive

Standco NO-SMOKE

STANDCO BRAKE LINING

nothing novel—no bunk—but it gets the job done without scoring brake rims. See page 2100 Composite Catalog.

Standco Brake Lining Co.
HOUSTON

NOTES FOR THE Equipment Buyer and User

committee, was announced last week by C. A. Higgins, president. A. B. Nixon, director and former general manager of the company's naval stores department, was elected a vice president and a member of the executive committee, filling the committee position vacated by Rheuby. A. E. Forster, assistant general manager of the naval stores department, was appointed general manager, succeeding Nixon.

Cardwell Manufacturing Advances Arthur Harvey and R. M. Smith

Arthur Harvey, for the past five years sales manager of Cardwell Manufacturing Company, Wichita, has been named general manager of the company. He has been succeeded as sales manager by R. M. Smith, former Illinois sales representative.

R. M. SMITH

Harvey, a graduate of the engineering school of the University of Kansas, was employed as construction and maintenance engineer for various railroads and later as sales representative for American Hoist & Derrick Company before joining Cardwell Manufacturing Company.

Smith, who received his education in engineering at Washington University,

ARTHUR HARVEY

Well-Pulling and Pump Repairs

Cut from $100 to $12 Per Month

That's the record of a Seminole Operator who increased production, cut costs, reduced "down-time," with

MARTIN PLUNGERS

Now you can get true plunger pumping action and the tough rubber & fabric wearing surface, made possible by the exclusive one piece, machined Martin plunger body and split rings, compensated to give uniform working fit in the barrel.

Made for all types and sizes of Rod and Tubing pumps.

Sold only thru supply stores.

Write for Illustrated Literature. See P. 1562 Composite Catalog. Page K-15 Producing Equipment Directory.

Martin Plunger Body without Rings

Field Representatives:
Tom Hulett, El Dorado, Ark.
C. J. Baeten, Eldorado, Kans.
Lynn C. Holloway, Houston, Texas
Hugh Robinson, Blackwell, Okla.
Claude Wilmeth, Kilgore, Texas

JOHN N. MARTIN Manufacturer
11 W. Brady St. Tulsa, Okla.

For QUICK, ACCURATE TESTS Use CURTIN CENTRIFUGES

No. 3420...15 c.c. machine. Cranks and heads interchangeable with 100 c.c. machines.

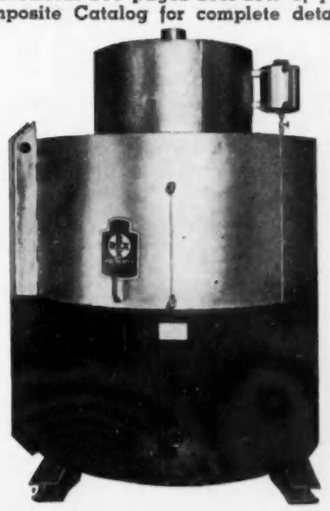
Simple in design . . . Ruggedly built . . . Require no special care . . . Gear Ratio and throw of crank produce required speed with no strain. Curtin Centrifuges meet all A.S.T.M. STANDARD METHOD D-96-35 and A.P.I. CODE NO. 25 requirements. Full descriptive literature upon request.

W·H·CURTIN & CO. Inc
HOUSTON U·S·A TEXAS

REX PRE-HEATER

Planning a Wildcat?

A Rex Pre-Heater will save you 25% on fuel . . . an important item especially when it is necessary to haul fuel oil to the location. See pages 2146-2147 of your Composite Catalog for complete details.



THE REX COMPANY
P. O. BOX 2431 HOUSTON, TEXAS
Mid-Continent Distributor: The Continental Supply Co.
California Distributor: The Howard Supply Co.

NOTES FOR THE Equipment Buyer and User

was a draftsman for McQuay-Norris Company and sales manager for W. B. McKnight Machinery Company. He was also associated with several oil companies as field superintendent, production superintendent, vice president and production manager.

E. R. Jukes has been named Illinois sales representative, and will make his headquarters in Salem.

McMurray Field Representative For New McEvoy Gas Lift

McEvoy Company, Houston, has announced the appointment of E. D. McMurry as special field representative for the company's new Fluid Weight gas lift system.

McMurry was field sales and service man for the Guiberson Corporation for four years. He will make his headquarters at the company's main office.

Wilson Manufacturing Builds Rig with Special Features

A rig incorporating several special features has been built for export to South America by Wilson Manufacturing Company, Wichita Falls, Texas.

Designed to drill wells to 6000 feet with 4½-inch drill pipe and to 8000 feet with 3½-inch drill pipe, the rig is equipped with friction clutches on both drum clutches, on rotary drive and on pump drive through a two-pump jackshaft; with air controls on both drum and chain transmission clutches; with centrifugal pump driven from the drawworks engine output shaft to furnish water for the cooling system for both drum clutches and brake rings; with single-stage air compressor driven from drawworks engine output shaft to furnish air under pressure for operation of drum and transmission clutches, and with flame-hardened and ground brake rings.

It is powered by Caterpillar 4-17000 full Diesel engines, equipped with two pump jackshaft from the rear or pump engine. Oil-bath chain compound drives are so arranged that the power from three engines may be combined either to drawworks or the pump drive so that two engines can be used on the drawworks and one for the pump, or two for the pump and one on the drawworks.

The complete unit is mounted on Model ET 1025 Athey truss wagon with 24-inch heat-treated tracks, eliminating the necessity of dismantling when moving between locations.

E. D. McMURRY

Supply Personals

L. A. Babb, vice president and director of sales for Bridgeport Machine Company, has been transferred from Wichita to the Tulsa general sales office. Tulsa offices have been moved from the Thompson Building to the National Bank of Tulsa Building.

Fred E. Cooper of Fred E. Cooper Company, Tulsa, and Harold E. Cosgrove, executive manager of the Purchasing Agents Association of Tulsa, last week left for New York and Canada by plane on a combined business and pleasure trip.

John Pearce, representative at Tulsa for The Pittsburgh Screw & Bolt Corporation, has returned to Tulsa after an extended field trip through Kansas, Oklahoma and Illinois.

H. R. Powers, Bethlehem Supply Company, Tulsa, returned recently with his family from a vacation trip to New Mexico and Colorado.

M. C. Elworthy, for the past 16 years associated with Ray Day in the Magneto Ignition Company, Tulsa, has disposed of his interests to Day to join the sales department of Consolidated Supply Company, Picher, Oklahoma. Elworthy will cover the Mid-Continent area and establish headquarters in Tulsa.

Harold Cooper, foreign representative of Fred E. Cooper Co., Tulsa, left recently for a tour of South American oil fields.

C. H. Monnette, representative for Imperial Belting Company in Oklahoma, Texas, Arkansas and Louisiana, has been appointed assistant sales manager and transferred to the Chicago offices.

DISTRIBUTES HARMONIC VIBRATION

The APECO Sucker Rod Rotator lessens harmonic fatigue in the sucker rod string, and by constant rotation of the rods, the vibrations are uniformly distributed rather than being concentrated. In many instances, fatigue failures have been practically eliminated.

The rocking, rotating action of the APECO Sucker Rod Rotator allows the rod string and working barrel to "free wheel," thereby minimizing wear and deterioration on all subsurface pumping equipment.

Write for fully descriptive literature.

Advanced Petroleum Equipment Corp.
M & M Bldg., Houston, Texas
APECO PRODUCTS

Special Drilling Rig Built by Wilson Manufacturing Company

Squeaks from the Bull Wheel

By Acclamation

The negro preacher's term had expired and he was anxious to stay on.

"Brethren," he said, "the time has come fo' youall to elect a pastah fo' anothah yeah. All those favorin' me will please say 'Aye.'"

He waited a moment, and then he said: "Silence gives consent. I'se yo' pastah fo' anothar yeah."

Share Expenses

"I can hear your new radio set as though it were in my room."

"Then would you care to help me pay off some of the instalments?"

The Periphery

"This morning I went over to see a new machine we've got at our place, and it's astonishing how it works."

"And how does it work?"

"Well, by means of a pedal attachment a fulcrum lever converts a vertical reciprocal motion into a circular movement. The principal part of the machine is a huge disc that revolves in a vertical plane. Power is applied through the axis of the disc, and work is done on the periphery, and the hardest steel by mere impact may be reduced to any shape."

"What is this wonderful machine?"

"A grindstone."

400 Is Enough

Some day motorists will be getting 400 miles to the gallon of gasoline.

And claiming they are getting 500.

"How Many, Lady?"

So Joe will make a fortune, you think?

Yes; he sells cellophane masks to keep children's faces clean while their mothers are getting ready to take them visiting.

Difficult Course

Garbed in leather jerkin, plus-fours, studded shoes, and golf glove, the stranger strolled from the club-house and engaged a caddy to carry his bag of many clubs.

Selecting his driver on the first tee, he addressed the ball confidently, took a mighty swing, and gazed far ahead to discover the ball's flight. But he looked in vain, for the ball had not been disturbed from its calm repose at his feet. Again he tried, and again he failed.

After his third attempt, the golfer turned to the poker-faced caddie and remarked.

"Dashed difficult course this, isn't it?"

New Definition

What's a counter-irritant?

A counter-irritant must be a person who shops all day and doesn't buy anything.

Explanation

"So the chemistry professor is having a lot of trouble lately with his experiments?"

"Yes, he's got too many ions in the fire."

Ridiculous

"I bought this clock here last month," he complained, "and it's no good. It runs backward."

The jeweler examined the clock. "Runs backward," he echoed. "That's funny."

"It isn't funny to my wife. She's tired of getting up at six in the morning to cook supper."

Gardening Hazards

Did your garden do well?

No; every time my husband started digging, he found a lot of worms, so he would always quit and go fishing.

Going Up

Daddy, give me a dime.

Don't you think you're getting too big a boy to be asking for dimes?

All right; give me a quarter.

Back to Nature

"You can always tell when you are out of civilization."

"How?"

"There are no more billboards."

Green Eye

"How are you getting along?"

"Still keeping alive."

"What's your motive?"

That Man Again

She opened the door suspiciously, and when she saw on the step a cheerful young man with a suitcase in his hand she began to close it again.

"One moment, madam! I am not an insurance canvasser, and I don't want to sell you toilet preparations, stockings, books, or, indeed, anything of that sort."

She hesitated, the door half closed.

"I do not represent a sewing-machine company, nor one selling electric cleaners."

The door began to open again.

"I am not asking subscriptions for a charity—I find it hard enough to make a living for myself."

These reassurances had their effect, and she opened the door wide.

"I am not seeking your support for any political party or any other organization."

"What in the world," she said, "do you want, then?"

"I see that I have interested you. I represent a firm which deals in brushes."

A Big Help

Panting and perspiring, two Irishmen on a tandem bicycle at last got to the top of the steep hill.

"That was a stiff climb."

"Sure and it was that. And if I hadn't kept the brake on, we would have gone backward."

Waste

"Now, can you give the class an example of wasted energy?"

"Yes, sir—telling a hair-raising story to a baldheaded man."

Experience

Two little boys were discussing their hospital experiences.

"Are you medical or surgical?"

"Dunno what you mean."

"Was you bad when you came, or did they make you bad after you come?"

Going Up

Ten cents is what I charged before—
It hurt my back and made me sore.
Fifteen cents is now my price,
And for twenty-five cents I'll do it twice—
Shine, Mister?

Gotkool
WATER CANS
& COOLERS
GOTT Water Cans are the practical way to keep drinking water cool for long periods, protected from impurities and always handy to the job. Snug fitting large removable top, strongly built to withstand rough usage. GOTT Water Coolers have extra large covers and a handy non-leaking push button faucet. Your Supply Store has them, get one today! . . . . . .
Gott
GOTT WATER CAN
Made in 1½, 3, 5, and 10 gallon sizes.
GOTT WATER COOLER
Made in 3, 5, 8, 10 and 20 gallon sizes
H. P. GOTT MFG. CO.
WINFIELD, KANSAS
KEEP PURE DRINKING WATER ALWAYS HANDY

INDEX TO ADVERTISERS

*** Indicates that detailed information on the manufacturer's products or services may be found in the 1940 edition of the Composite Catalog of Oil Field & Pipe Line Equipment.**

Page

A

*Abercrombie Pump Co. —
*Acme Fishing Tool Co. —
Acme Gas Lift Co. —
*Advanced Petroleum Equipment Corp. 80
Air Reduction Sales Co. —
*Ajax Iron Works —
*Alten's Foundry & Machine Works —
*Aluminum Company of America —
Aluminum Ore Co. —
American Askania Corp. —
American Assn. of Petroleum Geologists. —
*American Cable Division of American Chain & Cable Co. —
American Cast Iron Pipe Co. —
*American Hammered Piston Ring Division of Koppers Co. —
*American Iron & Machine Works Co. —
*American Meter Co. —
*American Sand-Banum Co. 71
*American Steel & Wire Co. —
Atlas Drop Forge Co. —
Atlas Supply Co. —
*Axelson Manufacturing Co. —

B

*Baash-Ross Tool Co. 5
*Baker Oil Tools, Inc. 4
*Baldwin-Duckworth Division of Chain Belt Co. 8
The Baldwin Locomotive Works —
*Baroid Sales Division —
William M. Barret, Inc. 74
*The Barrett Co. —
*Bartlett-Hayward Division of Koppers Co. —
*Bethlehem Steel Co. —
*Bethlehem Supply Co. —
*Black, Sivalls & Bryson —
*Braden Steel Corp. —
*Bradford Motor Works —
*The Brewster Co. —
The Bridgeport Machine Co. —
*Broderick & Bascom Rope Co. —
*Brown Oil Tools, Inc. —
*The Buckeye Traction Ditcher Co. —
Bucyrus-Erie Co. 63
*The Buda Co. —
*Butler Manufacturing Co. —
A. M. Byers Co. —
*Byron Jackson Co. —

C

Jo H. Cable —
*Cameron Iron Works —
*Cardwell Manufacturing Co. 3
Carnegie-Illinois Steel Corp. —
*J. I. Case Co. —
*Caterpillar Tractor Co. 29
*The Cavins Co. —
*Chain Belt Co. —
*Clark Bros. Co. —
*Climax Molybdenum Co. 76
*Coffing Hoist Co. —
Columbian Steel Tank Co. —
*Continental Motors Corp. —
Continental Oil Co. 37
The Continental Supply Co. 41
*Fred E. Cooper Co. —
*The Cooper-Bessemer Corp. —
*Core Laboratories, Inc. —
*Crane Co. —
W. H. Curtin Co. 79

D

*Darling Valve & Manufacturing Co. 6
De La Vergne Engine Co. —
*Diamond Chain & Manufacturing Co. —
*Dixon Valve and Coupling Co. —
*Dowell Incorporated —
*The Dragon Manufacturing Co. —
*E. I. du Pont de Nemours & Co. —

E

*Eastman Oil Well Survey Co. —
Economy Electric Lantern Co. —
Elastic Stop Nut Corp. —
*Engineering Laboratories, Inc. —

F

Failing Exploration & Drilling Co. 78
*Geo. E. Failing Supply Co. —
First National Bank in Houston —
First National Bank & Trust Co. of Tulsa —
Fluid Packed Pump Co. —
Ford Motor Co. —
The Fort Worth Clearing House Assn. —
The Fort Worth Laboratories 74
Fort Worth Steel & Machinery Co. —
Frick-Reid Supply Corp. —

Page

G

*Gardner-Denver Co. —
*The Garlock Packing Co. —
*Gaso Pump & Burner Manufacturing Co. —
Gay-Thornton Co. —
*General Electric Co. —
General Geophysical Co. —
General Motors Sales Corp. 7
Geophysical Service, Inc. —
*Globe Oil Tools Co. —
*Goodyear Tire & Rubber Co. —
*H. P. Gott Manufacturing Co. 81
*Gray Tool Co. 45
*Green Head Bit & Supply Co. —
*The Gulberson Corp. —
Gulf Envelope Co. —
Gulf Oil Corporation 9
Gulf Publishing Co. 4, 65, 71 and 73

H

*Halliburton Oil Well Cementing Co. —
Hardway & Cathey 74
C. J. Harter, Machinery 78
*Haynes Stellite Co. —
*Hazard Wire Rope Division of American Chain & Cable Co. Third Cover
Heidlie's Machine Works —
The Hercules Powder Co. —
*Hewitt Rubber Corp. —
Hoard Exploration Co. 74
*Hobbs Manufacturing Co. —
Houston Laboratories 74
Houston Pipe Appliances Co. —
*Hughes Tool Co. First Cover
Humble Oil & Refining Co. —
*Hunt Tool Co. —
Hyatt Bearings Division 7

I

Independent Exploration Co. —
*Ingersoll-Rand Co. —
*International Harvester Co. 31
*The International Nickel Co. —

J

Jarecki Manufacturing Co. —
*Jensen Brothers Manufacturing Co. —
*Johns-Manville —
*M. O. Johnston Oil Field Service Corp. —
The S. M. Jones Co. —
*Jones & Laughlin Steel Corp. —

K

*Kerotest Manufacturing Co. —
*Keuffel and Esser Co. —
*Kibele Manufacturing Co. —
*Kinzbach Tool Co. —
*Koppers Co. —

L

Landis Machine Co. —
*Lane-Wells Co. —
*Larkin Packer Co. —
The Thomas Laughlin Co. —
*The Layne & Bowler Co. —
Lebanon Steel Foundry —
*Le Roi Co. —
*A. Leschen & Sons Rope Co. —
*The Lincoln Electric Co. —
*Line Scale Co. —
*Link Belt Co. —
Lone Star Cement Corp. —
*Lucey Boiler & Manufacturing Co. —
*Lucey Export Corporation —
*The Ludlow Valve Manufacturing Co. —
*Lufkin Foundry & Machine Co. —

M

*MacClatchie Manufacturing Co. —
Macwhyte Co. —
P. R. Mallory & Co., Inc. —
The Marley Co. —
Marmon-Herrington Co. —
*John N. Martin, Manufacturer 79
McCollum Exploration Co. —
*McEvoy Co. —
McKissick Products Corp. —
*Merco Nordstrom Valve Co. —
*Merla Tool Corp. —
*Metric Metal Works —
*Midco Bailer Co. —
*Miller Sand Pump Co. —
*Minneapolis-Moline Power Implements Co. —
*Mission Manufacturing Co. 12
*Lee C. Moore & Co. —
*Morse Chain Co. Second Cover
Mott-Smith Corp. —
Mudrite Chemicals, Inc. 78
Murray Rubber Co. —

N

National Bank of Tulsa —
*National Lead Co. —
The National Supply Co. 32-33

Page

National Tank Co. 50
National Tube Co. 42-43
Norvell-Wilder Supply Co. —
*Novo Engine Co. —

O

*Oil Center Tool Co. —
*Oil City Brass Works —
Oil Well Supply Co. 49
*Otis Pressure Control, Inc. —

P

*The Parkersburg Rig & Reel Co. —
*Patterson-Ballagh Corp. 65
*Pelican Well Tool & Supply Co. 67
Petroleum Electric Power Assn. 54
Petroleum Rectifying Co. of California —
*Pittsburgh Equitable Meter Co. —
*Pittsburgh Steel Co. —
Plymouth Cordage Co. —

R

Reading-Pratt & Cady Division of American Chain & Cable Co. —
*Rector Well Equipment Co. —
*Reda Pump Co. —
*Reed Roller Bit Co. —
*Regan Forge & Engineering Co. —
*Joseph Reid Gas Engine Corp. —
*Republic Steel Corp. —
*The Rex Co. 79
*The Ridge Tool Co. —
John A. Roebling's Sons Co. —

S

Safety Gas Main Stopper Co. —
Jack A. Schley 74
*Schlumberger Well Surveying Corp. —
The Second National Bank of Houston —
*Security Engineering Co. —
Seismic Exploration Co. —
Seismograph Service Corp. —
Shell Oil Co., Inc. —
Shilstone Testing Laboratory, Inc. 74
*SKF Industries, Inc. —
A. O. Smith Corp. —
*E. M. Smith Co. —
*South Chester Tube Co. —
Southern Engine & Pump Co. 75
Southern Pacific Lines —
Spang Chalfant, Inc. —
*Spang & Company —
*Sperry-Sun Well Surveying Co. —
Standard Supply and Hardware Co. —
*Standco Brake Lining Co. 78
*Star Drilling Machine Co. —
Straus-Bodenheimer Co. —

T

E. C. Tecktonius Manufacturing Co. —
*Templeton, Kenly & Co. —
Texaco Development Corp. —
The Texas Co. —
Texas Electric Steel Casting Co. —
The Thermoid Co. —
*The Timken Roller Bearing Co. —
*Tretolite Co. 47
Trinity Portland Cement Co. —
Tulsa Shock Absorber Co. —
*Twin Disc Clutch Co. —

U

*Union Wire Rope Corp. 73
*Union Carbide & Carbon Corp. —
*United States Rubber Co. —
United States Steel Corp. 42-43 and 49
*Universal Atlas Cement Co. —

V

*Vickers, Inc. —

W

Warner & Swasey Co. —
*Waukesha Motor Co. —
*Well Machinery & Supply Co. —
Well Surveys, Inc. —
Western Electric Co. —
*Westinghouse Electric & Manufacturing Co. —
*Wheeling Machine Products Co. —
*The Wheland Co. —
Wichita Engineering Co. —
*Wickwire Spencer Steel Co. 39
*J. H. Williams & Co. —
*Wilson Manufacturing Co. —
*Wilson Supply Co. 58
Witte Engine Works —
Worth Hotel 75
*Worthington Pump & Machinery Corp. —
Wyatt Metal & Boiler Works. Fourth Cover

Y

Youngstown Sheet & Tube Co. 10